IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

UNITED STATES OF AMERICA	)	NO. 4:21-CR-09
	)	
	)	
VS.	)	Houston, Texas
	)	1:27 p.m. to 5:40 p.m.
	)	
ROBERT T. BROCKMAN	)	NOVEMBER 15, 2021

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COMPETENCY HEARING

AFTERNOON SESSION

BEFORE THE HONORABLE GEORGE C. HANKS, JR.

UNITED STATES DISTRICT JUDGE

VOLUME 1

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NOVEMBER 15, 2021

(1:27 p.m. to 5:40 p.m.)

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(Defendant present.)

THE CASE MANAGER: All rise.

THE COURT: Please be seated, everyone. Okay. Counsel, you may proceed when ready.

MR. MAGNANI: Thank you, Your Honor. And, actually, maybe before -- I just want to -- We came to an agreement with the defense that the clips of video would be most easily identified if we give them sort of sub-numbers.

THE COURT: Okay.

MR. MAGNANI: So, what we just watched was a
01:27:29 clip from Exhibit 40, and I am now identifying it as Exhibit 40-A.

THE COURT: Okay.

DIRECT EXAMINATION (Continued)

BY MR. MAGNANI:

01:27:42 **Q.** Dr. Darby, do you remember the exhibit clip that we watched before the lunch break?

A. Yes, I do.

Q. So, first of all, can you just give the context? What was going on in that exhibit clip? Well -- sorry --
01:27:53 I'll ask a different question.

Where were you in that video?

A. So, this was a clip from my interview and examination with Mr. Brockman that occurred in May of 2021. So I was in a conference room, at Jones Day, where I met with
01:28:09 Mr. Brockman, with the videographer, and was asking him about his symptoms related to his cognitive and memory problems.

Q. So, besides the fact that you were in a conference room in a law firm and in front of cameras, how does this
01:28:22 compare to the type of clinical evaluation you do in your work at Vanderbilt?

A. Well, this would be very similar to a clinical evaluation. So, I was asking him the same types of questions about his cognitive symptoms and trying to get a
01:28:34 sense of his other medical issues and the history that he had had coming in.

Q. So, in the clip that we saw, you had asked him to describe his cognitive problems? Is that -- is that right?

01:28:50 **A.** I was asking -- Yes. I was asking him about his memory concerns.

Q. Okay. And how did he respond?

A. And, so, Mr. Brockman told me about his memory concerns and directed me towards evidence from his primary
01:29:01 care doctor that he had followed for some time, prior to

to seeing -- so, Dr. Bill Obenour, who had been his primary care doctor.

He was aware of the question I was asking and the purpose of it, which was to evaluate his memory, and he was able to recall that he had a box of these records where at some point in the past he had mentioned memory concerns to Dr. Obenour and directed me towards them because he thought they may be useful in our evaluation and was able to link it back to the question of memory.

Q. So, responding that way to your question about when cognitive problems begin, what does that demonstrate?

A. Again, it demonstrates an awareness of the purpose of our evaluation, which is to demonstrate his memory and cognitive abilities. It demonstrates an awareness of some of the things that might be useful in our evaluation; so, having other medical records that have -- at the time I wasn't aware of that mentioned memory concerns at an earlier time and that that might be beneficial to me, as I was trying to come to an evaluation regarding his memory.

Q. And, so, how does that ultimately inform your opinion about his cognitive function in May?

A. So, these are the types of examples of cognitive abilities that were lacking in some of the cognitive testing. So, these were examples that I would expect from

someone who would mostly be having mild cognitive difficulties but not having cognitive problems that would progress to a more advanced stage.

Q. So, what does this inform about -- does this tell us whether -- what does this tell us about dementia?

A. Well, it's consistent with the ultimate diagnosis that he was at the stage of mild cognitive impairment at that time.

Q. Now, you mentioned that he pointed you to records that you hadn't seen before?

A. Right.

Q. Is that what you said?

A. Yes.

Q. Why hadn't you seen those records before?

A. They hadn't been given to me at that time.

Q. Okay. And are those records that are within the ambit of your review in this case?

A. Yes. So, I eventually -- we requested those records after learning about this, and I did obtain them several weeks later and reviewed them.

Q. And who was the first person who told you about the existence of these records?

A. Mr. Brockman was the one that told us during this interview, so that was the first time I had known about those records.

Q. We showed a short clip of video, but can you approximate about how long your whole exam was?

A. So, I believe I was there for three hours in total. I think there was about an hour-and-a-half to two hours of interview. There is the examination, and then I also spent time talking with Mrs. Brockman as well.

Q. So, without watching the whole video, can you just describe Mr. Brockman's performance over the course of your in-person examination?

A. So, that was one of the examples of where Mr. Brockman did better in the interview, so where he seemed to have an awareness of what was going on and was able to answer my questions.

During the cognitive testing the rate at which he was responding to the questions was slower, and he struggled with much more of the testing results in responding to my questions during the inter -- during the examination than he did during the interview.

Q. But throughout the interview portion were there other examples of him demonstrating a higher level of cognitive function?

A. There were. So, he was able to give me some specific examples and a general overview of his medical history that was largely reflected in the medical records I reviewed. He was able to give me a few examples of things

that had happened that, when I talked with his wife, were accurate.

So, he told me, for instance, that he took expired antibiotics before his last hospitalization for an infection and delirium, which his wife also stated.

He told me about the example where he was having a hallucination during his neuropsychological test.

So, I couldn't check everything that he told me, but, at least, the examples that I mentioned are places where he seemed to be accurate in terms of his recollection.

Q. And you have been describing this exam in the context of your first expert opinion, your diagnosis of MCI in May. And you said that in the normal course you wouldn't expect much change, but what happened in this particular case?

A. Well, in this case, Mr. Brockman had a very serious hospitalization for an infection. So, he had sepsis, or an infection in his blood, and delirium, which is an acute transient confusional state that goes along with that. And he was in the hospital for about 12 days at the beginning of June.

Q. Was that the first time he had sepsis?

A. No, it wasn't. So, he had been hospitalized with sepsis in March of 2021 as well.

Q. Besides the incidence of sepsis before your evaluation and the other one after it, were there any other -- Well, let me ask this question: What else happened in June besides the hospitalization for sepsis
01:34:09 that could come to bear on Mr. Brockman's cognitive health?

A. So, he also had a surgical procedure. So, he underwent a urological procedure where he had general anesthesia, which can be another risk factor for
01:34:23 developing delirium.

Q. So, you have got the surgical procedure. You have got the sepsis hospitalization. How do these things potentially contribute to neurocognitive dysfunction?

A. So, anytime there has been an episode of delirium,
01:34:39 that can increase the rate of progression of dementia. And, so, in patients with these disorders, like Alzheimer's or Parkinson's, having an episode of delirium can accelerate that progression that you might see.

Q. Were you concerned that either of these June medical
01:34:55 events could have created such an acceleration of neurodegeneration in this case?

A. Yes, particularly at his early hospitalization in June, where he was in the hospital for 12 days and was described as being delirious during that time.

01:35:10 **Q.** Have you had the opportunity to review video footage

of Mr. Brockman being examined in July after these two events?

A. Yes. So, he had examinations by the defense expert witnesses in July, which I had access to and reviewed.

01:35:25 **Q.** And just -- I mean, how did he appear in July?

A. He appeared markedly different. So, he appeared confused. He appeared to respond to certain questions with answers that didn't make sense, and seemed very different than the time when I saw him in May.

01:35:42 MR. MAGNANI: Your Honor, at this point I would like to play another clip from that longer video. This one is going to be Exhibit 91, and I am now just marking it as sub-A for the clip, but the time stamp on the original exhibit is 30 minutes and 25 seconds to 34 minutes and five

01:35:57 seconds. So, it's about a three-and-a-half minute clip, Your Honor.

THE COURT: Okay. You may proceed.

(Video played as follows.)

****

01:36:05 **Q.** ...issues that you have had?

A. Well, it actually began sometime in July. And they end up putting me in Methodist and telling me that I was -- what's the term for a bug that kind of invests itself inside of me physically? And it's one of those ones that,

01:36:40 if you don't handle it properly and quickly, it will kill

you.

Q. Okay.

A. And -- at any rate, that -- that's what happened to me.

01:36:52 **Q.** Do you know how that happened or why that happened?

A. No.

Q. Where was the bug in you? Where was it located?

A. Basically, in the bladder.

Q. Okay. And how did they treat it?

01:37:04 **A.** They treated it with -- one of the ingredients is -- basically, I will say a list of characteristics to make a car not work right.

Q. Okay.

A. And, so, it makes it to the service adviser. He's

01:37:51 the one that's pretty skilled.

Q. Yeah.

A. They can use that list, I guess, their list of what they think is going on, going on on the inside.

Q. Do you have other medical issues or medical

01:38:06 conditions besides the one you just mentioned?

A. Yeah.

Q. Can you tell me about -- what ones do you know about?

A. Well, there's a -- I have had prostate infections before.

01:38:22 **Q.** Okay.

A. Not often, but I have had my share where I kind of know what's going on. And they wanted authorization, you know, to do -- you know, what I was asking. And so we prepared a letter for them to go get -- They were actually on CDK. They were not on our software. But their -- their moan and gripe -- I have to warn you. I am -- can't hardly explain this. I am going to have to get out and wander around.

Q. Well, let's do this. How about -- I am going to ask a different question.

A. Okay.

Q. Okay. Can you tell me, where are we right now?

A. We are on the northern side of Houston by one of the main traffic arteries.

Q. How about this place right here? Where are we right now?

A. It's a hotel that my attorneys have engaged for the purpose of holding this meeting.

Q. This is a hotel that we are in now? Do you know --

A. Well --

(Video concluded.)

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BY MR. MAGNANI:

Q. Dr. Darby, you were not present for that evaluation, right?

A. No, I was not.

Q. But do you know -- was Mr. Brockman at a hotel?

A. No. My understanding was that he was at Jones Day in a conference room.

01:39:58 **Q.** And, so, in that clip, he talked about bladder infections, cars not working, something about a skilled service provider, went on about prostate, and then CDK software. Is that -- did you -- are those things that he brought up?

01:40:15 **A.** Yes, those are the things he was saying. So, it appeared as if he was confused. He was being asked about medical issues, and he would respond at times to that, but then would begin speaking about things that didn't make sense or they didn't follow from the question, why he had

01:40:31 switched to talking about that topic.

Q. So -- and -- well, I mean, how does that compare to the Mr. Brockman that you met with in person in May?

A. So, it appears markedly different. So, you know, in May during our evaluation he always had an understanding

01:40:48 of my questions. You know, there are times where he could remember details, but he never became nonsensical or was talking about things that weren't related to what was going on.

Q. Have you considered what could account for this

01:41:04 pretty dramatic change in presentation?

A. Yes. So, I think there are three main things that could be considered in this.

And, so, one is that he's had rapid progression of dementia, that his neurodegenerative
01:41:20 disorder progressed rapidly and that that explains why he's presenting so much worse in July than he was when I saw him in May.

The second possibility is that he was still actually delirious during July during those
01:41:33 evaluations. And, so, you know, after a delirium, which is, again, a transient episode, there can be some continued subtle symptoms that may persist. And, so, while the time course from his hospitalization to July would be atypical to have that degree, it's still
01:41:50 possible.

And the third possibility is that he was exaggerating his symptoms more than he had been previously.

Q. And, so, just -- I want to walk through how you
01:42:00 explored these potential possibilities starting with the first.

So, what did you do to investigate whether or not the change in presentation was due to a genuine neurological decline?

01:42:15 **A.** So, to investigate that, we ordered another FDG PET

scan of the brain. So, again, that's the PET scan that looks at brain metabolism, that would look at brain activity, and could be a source of trying to see if there is brain damage. So, by comparing it to the March scan, 01:42:30 we could see had there been a significant change in that brain PET scan that would go along with an advancement of his dementia progression.

Q. And, Dr. Darby, I want to pull up -- So, do you remember when you ordered this scan?

01:42:44 **A.** So, this scan was recommended. I don't believe I ordered it, but it was performed in August of 2021.

Q. Okay. And this is the slide we were looking at before, right?

A. Correct. Yes.

01:42:56 **Q.** Okay. Can you describe in words what -- what does this show? What is the blue indications on these six angles of brain?

A. And, so, these are six different views of Mr. Brockman's brain, so from different angles. And the 01:43:17 blue -- so, the colors correspond to areas of brain damage on the PET scan. So, these are areas where there is reduced brain activity in Mr. Brockman's case.

And, so, you can see that there is reduction in a number of areas, although this is less than 01:43:31 my mental image of what a typical dementia patient would

look like.

Q. And, so, just -- I want to get a little bit deeper here.

So, what is a radio tracer?

01:43:43 **A.** So, a radio tracer -- these are all scans where there is an injection of a radioactive material that binds to a specific thing in the body. And, so, in this case, it binds to your glucose, which is the energy source.

Q. And when you say in this case "it," do you mean that

01:44:00 FDG is a radio tracer that binds the glucose?

A. Yes. So, there are different types of PET scans, and it depends on what that radio tracer binds to.

Q. And why do we want to see how much radio tracer binds to the glucose?

01:44:14 **A.** So, this is a measure of brain function. So, it tells you how active -- or metabolically active those brain areas are. And it's a marker of brain damage. And, so, if there is less of the tracer going to a specific area of the brain, that indicates there has been brain

01:44:28 damage to that region and suggests that there could be neurodegeneration there.

Q. So, the areas that are lit up, that's -- is that the good parts or the bad parts?

A. Those are the bad parts.

01:44:41 **Q.** Okay.

A. So, the areas showing colors are the areas where he has less tracer going to that brain region.

The gray areas are normal. So, those are the areas that are normal in the brain.

01:44:52 **Q.** And, so, is this a -- is this a picture or is this a graphical representation of something else?

A. Well, it's a graphical representation of those numbers. So, each, kind of, point on that picture corresponds to the amount of blood sugar going to that

01:45:07 brain area. And then the colors correspond to how significant that is; so, how off or abnormal that is.

Q. And, so, specifically, the measure of metabolic uptake, what is that being compared to in order to generate these different colors?

01:45:25 **A.** So, it's being compared to subjects who do not have any neurological or cognitive disorders. So, this is in comparison to groups of subjects that don't have any neurological or cognitive diseases.

Q. And you said earlier about how this is not consistent

01:45:45 with what you see in your clinical practice of dementia patients. Right?

A. Correct.

Q. Okay. And, so, can you just -- again, just describe, as best as you can, what would this -- what would have to

01:45:58 happen to these images for it to be consistent with what

you see in your clinical practice?

A. So, the areas of the color -- so, the blue colors -- would be wider and they would be more extensive; so, they would involve much more of the brain than what we are

01:46:13 seeing here.

Q. And I just also -- just to -- sorry to sort of bring it back -- but what is the -- what is the interplay between what an FDG PET measures and what a volumetric MRI measures?

01:46:30 **A.** So, they're both different ways of trying to measure for brain damage.

So, the FDG PET scan looks at that brain activity or brain function, and that is a more sensitive marker for underlying damage.

01:46:44 The brain MRI looks at the brain volume -- so, how large is the area -- and that can be a later marker of patients with neurodegenerative disorders.

Q. And when you say "a later marker," not to be too obvious about it, but what happens first? The changes in

01:47:01 metabolic uptake or the changes to brain volume?

A. The changes in metabolic uptake typically happen first. So, it's more sensitive of detecting these problems at an earlier stage.

Q. Okay. Now, you started talking about a comparison.

01:47:15 Can you actually advance to the next

slide, please?

A. Yes.

Q. What is this slide depicting?

A. So, this is Mr. Brockman's original FDG PET scan that was obtained in March of 2020.

Q. And the same question as before about the August one. How does this correspond to what you see in your clinic of dementia patients?

A. Again, this would be something that would correspond to an early patient in that disease course; so, typically, at the range of a mild cognitive impairment.

Q. And did you get -- did you compare the -- Excuse me. Did you compare the March and August FDG PET scans?

A. I did, yes. And, so, here we can see the two scans. And, so, on the top is Mr. Brockman's scan from March of 2021. On the bottom is his scan from August of 2021. And the different views or slices are corresponding to each other.

And what you see is that there is a very similar pattern in the areas that are involved, that there has probably been a mild amount of progression but largely looks the same as it did in March.

Q. You talked about what you would expect to see in the normal course. How do the changes in these two PETs compare to the changes you would see in the normal course

within five months?

A. This is about the changes that I would expect, that there has been a mild progression in the areas that are involved and the extent.

01:48:49 **Q.** So, did you -- did you read any other expert opinions about this change?

A. Yes. So, I looked at the other opinions regarding the two PET scans and compared them.

Q. And, so, what is this that you are now showing on the

01:49:11 screen, Dr. Darby?

A. So, this is a larger chart looking at the different impressions from the different people that look at these PET scans.

Q. Okay.

01:49:21 **A.** So, again, the clinical radiologist was the radiologist at Houston Methodist who evaluated the PET scans. Dr. Ponisio was the government expert, nuclear radiologist. Dr. Whitlow is the defense expert neuroradiologist. And then my own opinions.

01:49:38 And, again, for the disease itself, in terms of the pattern, I think the opinions were fairly consistent. In terms of the severity of that, they were fairly consistent.

And then focusing on the change. And, so,

01:49:51 Dr. Ponisio felt that that represented mild progression.

Dr. Whitlow commented that they were similar between the two recent scans, though it may have progressed slightly. And I also stated that I felt that there had been some minimal progression between the two scans.

01:50:08 **Q.** So, if any, how much disagreement is there amongst the experts of the change between the March and August FDG PET scans?

A. In terms of the comments about the change, I don't think there appears to be a large amount of difference

01:50:21 between the experts.

Q. As far as you can tell, is there any difference?

A. No. Not in reading this, no.

Q. So, your -- how does this inform your investigation of the different things that could have lead to the change

01:50:37 in presentation of Mr. Brockman between May and July?

A. Yeah. So, this amount of change on the PET scan would not explain the amount of change we saw in his performance in the July interviews compared to May.

Q. So, does -- what does this tell us about whether the

01:50:55 sepsis that Mr. Brockman suffered from in June -- what does this tell us about whether that sepsis contributed to an accelerating case of neurodegeneration?

A. Well, it didn't contribute to an acceleration of what I would expect in terms of his FDG PET changes and can't

01:51:13 fully explain the change that we see in his examination.

Q. Okay. So, back to the -- what was the second potential that you investigated to try to determine the change in presentation of Mr. Brockman?

A. Yeah. So, the second consideration was that he could still be delirious. And, so, delirium is a transient acute confusional state. So, it occurs quickly and is reversible and is related to the underlying medical issue causing it.

01:51:25

And, so, after a hospitalization for delirium, it would still be possible that he could have some residual delirium after he left. And, so, that was another consideration as to whether he was still delirious at the time in July and whether that could explain the differences that we are seeing.

01:51:43

01:51:59

Q. So, was there a way available to test if he was delirious at the time of the July exams?

A. No. So, after the fact there is not a way to test, after he's been seen, whether he was actually delirious at that time.

01:52:13

But what we did recommend is getting a test to see if he could still be delirious afterwards. And, so, we recommended getting an EEG test of the brain. And, so, that looks at the brain's state. So, what state is that electrical brain in? And it can tell us if he's in a brain state that would be consistent with delirium.

01:52:31

Q. Do you recall approximately the date of the EEG in this case?

A. The EEG happened in September of 2021.

Q. And you said it can't tell us whether he was

01:52:47 delirious in July, but -- so, what does it tell us?

A. Well, it tells us that he wasn't delirious at that point. So, he didn't appear to be in a brain state that would go along with delirium.

Q. And -- sorry -- just to clarify: When you say "at

01:52:56 that point," do you mean in September, Doctor?

A. In September, yes.

Q. So, it sounds like you're -- you can't be sure if he was delirious in July; is that right?

A. Correct. I can't be sure that he was delirious or

01:53:07 not in July.

Q. If he was delirious in July, what would that mean?

A. Well, it would mean that the results of his evaluation at that time aren't valid representations of his actual cognitive abilities. So, if that was due to an

01:53:23 acute and transient state, then it wouldn't accurately represent what his true cognitive abilities are.

Q. And that's because it's transient and it went away, in this case, by September?

A. Correct.

01:53:35 **Q.** So, if he was not delirious in July, where does that

leave us?

A. Well, if he wasn't delirious in July and the change in his examination isn't related to a progression of his dementia, without another explanation, I think the most likely reason would be that he was exaggerating his symptoms with me.

Q. Now, there were subsequent examinations, videotaped examinations, in this case after July. Right?

A. Yes. Mr. Brockman was evaluated again in October by both defense and prosecution experts.

Q. And, just overall, how would you describe the difference in presentation of those two October evaluations?

A. Yeah. So, I think that in October there are no longer as many clear examples where he was confused to the degree that he was in July. So, there were not as many of those times where he appeared to be answering in nonsensical ways, but he still presented with much more significant cognitive problems than he did in May. So, he was often not being able to give complete, thorough or accurate answers.

MR. MAGNANI: And at this time, Your Honor, I would like to show Exhibit 93. This is a clip from 31 minutes and 35 seconds to 34 minutes. So, it's about two-and-a-half minutes, Your Honor. And I am marking this

particular clip as 93-A.

THE COURT: Okay.

****

(Video clip played as follows:)

01:55:02 **Q.** Okay. Hi, Mr. Brockman. Nice to see you again.

So, let me ask a question. I am going to lower my mask a minute. Do you remember seeing me or meeting with me before?

A. I remember your face.

01:55:16 **Q.** Okay. Do you remember who I am?

A. No.

Q. Do you remember anything about me?

A. Unfortunately, no.

Q. Okay. Do you know what I am here to do today?

01:55:29 **A.** Yeah. You're here to take my deposition.

Q. To take your deposition?

A. Uh-huh.

Q. What would I be taking your deposition for?

A. I don't know.

01:55:42 **Q.** Are you involved in a legal case right now?

(Video paused.)

****

MR. MAGNANI: And I apologize, Your Honor. I'm just going to interrupt the video here. It's actually not

01:55:50 the clip that we intended to show. Of course, we are happy

to show it if the Court would like.

Tell me when you have the clip up.

****

(Video played as follows:)

01:55:58 **Q.** Both of us are wearing masks. Can you tell me why we both have masks on?

A. Well, that's a good question. I never have thought about that. Other than the fact y'all like to do it --

Q. Well --

01:56:11 **A.** -- or you feel it is appropriate.

Q. Why do we have to wear a mask today?

A. I don't know.

Q. Do you wear masks at home?

A. No.

01:56:23 **Q.** Is there any reason why people are walking around wearing masks currently?

A. Well, because there's various big and bad infections, you know, and wearing a mask is one of the ways that you reduce the likelihood that you are going to get something.

01:56:42 **Q.** Is there one particular infection that people are concerned about?

A. It's all -- all related to the -- this -- I'm sorry, I can't give you a decent description on that.

Q. It sounds like you were just about to describe some

01:57:13 sort of infection out there.

A. Yeah. It's a virus.

Q. Yeah. How does it affect people?

A. Well, it depends on whether or not you have had preventive medicine. If you have preventive medicine, like you ought to, if you're less than ancient, then you have got a pretty good chance of surviving it.

Q. Okay.

A. I am 80, and I got the two-dose version of the vaccine put out by -- I think they're called Moderna.

Q. Yeah.

A. And it's kept my wife, my grandson, my son, my daughter-in-law -- it's kept everybody safe so far.

Q. What's the vaccine for?

A. It's to prevent infection from the COVID virus.

Q. Okay. When --

(Video stopped.)

****

BY MR. MAGNANI:

Q. Is -- how would you compare this October presentation to the one we just watched from before in July?

A. Yeah. So, in this video example, he's stating things that are appropriate to the question. So, he understands the question. He is not going into tangential or nonsensical responses that are related to something else. But he continues to really struggle with under -- being

able to answer it accurately.

So, this is something that, in May, he was readily aware about COVID and the virus, the precautions, the vaccine, and he struggled with that initially, where he gave general comments about preventing infections but struggled to get to the specifics.

01:59:00

Q. So, would you say the October presentation is not as bad as July?

A. Correct. It's not as bad as July but clearly worse than October.

01:59:14

Q. And, so, from when you first met this man until the most -- you know, these October recorded interviews, what accounts for that delta in presentation?

A. Well, again, you know, looking at that, what we expect, based on the natural disease course and based on the difference in his PET scans, is that there would be some mild progression in his symptoms, but not to the extent that we're seeing here and not to the extent that his family is reporting in terms of his functional impairments at home, where he is really dependent on most things, from what we're hearing.

01:59:28

01:59:43

Q. And so -- and was he delirious in October?

A. No, he was not. So, he -- again, he didn't seem to have those nonsensical responses. And the experts that evaluated him, I don't think there were any that

01:59:59

considered him to be delirious in October. So, I don't think that's a likely explanation for what was going on at that time.

Q. And, so, turning to the final opinion that you had, I mean, why do you still say that he is exaggerating?

A. Well, I think this is another example where he's exaggerating. And, so, you know, that's really based on examples that we have from before as well. And, so, prior to my May evaluation, there are really clear examples of him being able to perform at a higher cognitive ability than he was demonstrating in his clinical exams.

So, in 2019 we had examples of him giving speeches in depositions where he was clearly operating at a high level despite scoring in dementia range on his evaluations.

In 2020 he continued to work at Reynolds and Reynolds. And from the deposition testimony of Tommy Barras, one of his close work associates, there weren't any concerns that he had cognitive impairments to a degree where it would interfere with that work.

In my May evaluation he was able to demonstrate higher cognitive capacities than the dementia ratings that he was getting on his evaluations. But after May we don't have any of those examples. So, those videos in July and October, they don't demonstrate cognitive

abilities beyond his testing results, and we don't have any of those real-world examples to go on.

So, really, the only things we have to go on in terms of estimating, you know, what are his true cognitive capabilities, one is the expected disease progression, which, again, I would expect there to be mild changes. And the other is the brain imaging changes, which, again, were minimal or mild.

And, so, there's a clear gap between those. So, there is a clear gap between where we expect him to be based on that progression and based on the imaging and based on his actual reports of his functional impairments and his cognitive testing.

Q. And, so, you mentioned certain data streams drying up. I mean, when is the last time you saw Mr. Brockman performing outside of an exam room on videotape?

A. Performing outside of an exam room on videotape, I think it would be the videos of him giving speeches.

Q. What year is that, Dr. Darby?

A. That would be 2019.

Q. And in terms of examples of his function as CEO of his company, when is the last time you see examples, outside of the examination room, of him doing that?

A. That was through November of 2020.

Q. And in terms of in recorded interviews, when is the

last time you see video-recorded interviews of Mr. Brockman demonstrating a higher level of cognitive function than suggested by his testing?

A. That was in May of 2021.

02:02:46 **Q.** So, since May of '21, do you have any examples from the outside world, from outside the exam room, that show Mr. Brockman's cognitive function being higher than inside the exam room?

A. No. So, before May I had those examples, and after 02:03:00 May I don't have any examples where I can clearly show that he's performing at a higher cognitive ability.

Q. And, so, how do you -- without that information from the outside, how can you come to an opinion that he is still exaggerating today?

02:03:14 **A.** Well, I think it's related to the difference that we are seeing in the expected disease course and the difference in the neuroimaging. And, so, based on his most recent neuroimaging, I would expect that at the mild range of severity, so in the mild cognitive impairment 02:03:31 range. Based on the interval change between March and August, which was minimal, I would not expect him to have a significant amount of progression.

So, I have to base it entirely on those objective neuroimaging measures and an understanding of 02:03:44 the disease course, both of which are imprecise. So, we

know that there can be some variability with those; and, so, I can't give an accurate estimate as to what his true cognitive abilities would be because I simply don't have that information.

02:03:56 **Q.** So, you could give an accurate estimate in May but not as much now?

A. Correct.

MR. MAGNANI: I have no further questions, Your Honor.

02:04:05 THE COURT: Cross-examination?

MR. LOONAM: Yes, Your Honor. Just take a moment. Court's indulgence.

THE COURT: Sure. Take your time.

CROSS-EXAMINATION

02:04:29 BY MR. LOONAM:

Q. Good afternoon, Dr. Darby.

A. Good afternoon.

Q. Okay. Doctor, you have -- you agree that Mr. Brockman suffers from Parkinson's disease. Correct?

02:05:04 **A.** Yes.

Q. And Mr. Brockman was first diagnosed with Parkinson's disease back in January 2019. Correct?

A. Yes. I believe so.

Q. And that was after the government alleges that --

02:05:23 well after the government alleges that Mr. Brockman became

aware of this case and investigation. Correct?

A. I believe so, yes.

Q. But, nevertheless, unfortunately, Mr. Brockman suffers from Parkinson's disease. Correct?

02:05:41 **A.** Yes, he has Parkinson's disease.

Q. And Mr. Brockman's diagnosis was confirmed by a DaTscan. Correct?

A. Yes, it was supported by the DaTscan.

Q. And the DaTscan showed severe loss, severe loss of

02:06:05 dopaminergic -- apologies for that -- dopaminergic neuronal function in the bilateral dorsal striatum of his brain. Correct?

A. Yes. It showed Dopamine loss in those areas.

Q. Yeah. So, what is the severe loss? What's the

02:06:20 severe loss? What is happening to Mr. Brockman's brain?

A. Well, the loss of Dopamine neurons. So, again, those are the neurons that are involved in the motor symptoms; so, they are in the deep areas of the brain. And those are projecting to the basal ganglia, and that provides

02:06:36 evidence that there has been dopamine neuron loss that goes along with those motor symptoms he has been having.

Q. And not only motor symptoms, right?

A. I'm sorry?

Q. Parkinson's disease consists of both motor symptoms

02:06:51 and non-motor symptoms; is that accurate?

A. Yes, it can.

Q. And the motor symptoms in Parkinson's disease include bradykinesia, which is an impossible word to say, that means "moving really slow." Right?

02:07:04 **A.** Slowness, right.

Q. Resting tremors?

A. Yes.

Q. Rigidity?

A. Yes. Those are the hallmark motor features of it.

02:07:16 **Q.** Postural instability?

A. Yes. That's one thing that can be seen with it.

Q. Yeah. And you tested that, didn't you, when you were at Jones Day with Mr. Brockman?

A. I did, yes.

02:07:26 **Q.** You had him touch his nose, and at one point you had him standing, and you -- you hit him on the shoulders to see if he would fall back?

A. Yes. To check his postural stability, yes.

Q. And the non-motor symptoms of Parkinson's disease

02:07:47 include fatigue?

A. So, that's -- that's a pretty nonspecific symptom. It can be involved in Parkinson's disease, yes.

Q. Olfactory deficits, problems smelling stuff?

A. Yes. That can be a change that happens in persons

02:08:02 many years before they develop Parkinson's disease.

Q. So, those changes could start -- can start early, before Parkinson's disease is formally diagnosed?

A. The loss of smell has been one thing that has been reported for that.

02:08:13 **Q.** Uh-huh. What about -- what about anxiety? Is that associated with Parkinson's disease?

A. Well, anxiety can be associated with a number of these different disorders. And, so, you know, just anxiety in itself, it can occur. It wouldn't be the first 02:08:31 psychiatric symptom I would think of.

Q. Is it also associated with depression?

A. It can. So, some patients with Parkinson's disease have depression.

Q. And I think you mentioned this on -- on your direct, 02:08:45 that Parkinson's -- the non-motor symptoms also include, you know, learning and memory deficits. Is that accurate?

A. Well, so, patients with Parkinson's disease can develop cognitive issues; and, so, sometimes that involves learning and memory, but in other cases it involves other 02:09:03 aspects of their cognitive abilities.

Q. Such as?

A. Such as attention, working memory, decisionmaking and executive functions.

Q. And that's -- so -- and is that -- and that's just a 02:09:18 non-motor symptom of the Parkinson's disease, not -- not

Alzheimer's dementia, not Lewy body dementia. Those are non-motor symptoms of the Parkinson's. Correct?

A. Well, there are a number of reasons why cognitive symptoms can happen in a patient with Parkinson's disease.

02:09:36 One of them is related to the deeper structures of the brain, so the same areas that are affecting those motor circuits going from the basal ganglia to other areas. That can result in similar symptoms to the motor symptoms. So, there may be a

02:09:50 slowness in terms of thoughts. We call it "bradyphrenia." So that slowness in thinking, that slowness in decisionmaking, a slowness in speech, and that can lead to making things harder to get done, having difficulty with multi-tasking. So, some of those symptoms can be related

02:10:06 to damage in those areas.

Other symptoms of other cognitive in patients with Parkinson's disease are likely because the disease is spreading into other areas of the brain, into the cortex, where it may overlap and cause other types of

02:10:20 symptoms.

Q. Yeah. And the brain is amazingly complicated, as I have learned during this process, and it's really -- really something, huh?

Is there a project right now to, like, map

02:10:30 every neuron that is, you know -- and see where it is

going in the brain?

A. There are a number of projects going on trying to understand the brain.

Q. Yeah. And is it true that -- you know, because you talked about, you know, damage in one area -- but is it true that you could have damage in one area, but it winds up affecting another area that it's connected to somewhere else; and, so, where you're seeing the hypometabolism is actually caused by damage in another area?

A. Well, yes and no. And, so, damage in one area can affect areas of the brain that it's connected to. And, so, that is something that we know, that damage to that area affects the other parts of that circuit.

One of the ways it does that is by reducing the brain activity in that area. So, there is some uncertainty about whether things like fMRI or PET scans -- you know, it reflects brain damage, but it may also reflect damage from those connections.

Q. Yeah. And that's -- so, is that neuronal disruption?

A. It can be neuronal disruption or it can be disruption of the communication between the areas in a way that's not necessarily a neuronal dysfunction but an informational process disruption.

Q. I see. And those different processes that you just described, those -- those don't all lead to atrophy, do

they?

A. No. So, if there -- it can lead to atrophy. So, we can see that damage in one area will actually cause a connected area to become atrophied, but it doesn't always do that. And we can also see that damage in one area can reduce brain activity in a connected area. But, again, we don't always see that.

Q. Yeah. It's complicated?

A. Yeah. For instance, in PET scans one of the things you may look for, if there is disease in the frontal lobe, is there a corresponding difference in the cerebellum where there is a connection there.

Q. All right. Parkinson's disease often leads to dementia. Correct?

A. Yes.

Q. In fact, dementia is a common and devastating symptom of Parkinson's disease. Correct?

A. Dementia is a common symptom that happens in Parkinson's disease, and I think we would all consider it to be a very severe problem.

Q. So, you would agree it's a devastating symptom of -- of Parkinson's disease?

A. I think any time there is a disease resulting in affecting cognition, that is devastating.

Q. And we all agree that Mr. Brockman has Parkinson's

disease.

Do you agree that memory problems are frequently the first subjective cognitive complaint in Parkinson's disease?

02:13:19 **A.** So, typically, we think of memory symptoms as being the first symptom that we see in Alzheimer's disease. They can present in Parkinson's patients with cognitive impairment as well.

And sometimes patients will describe what

02:13:35 they are saying as memory problems but, in talking with them, it's slowness. It's difficulty coming up with a word. It may not be related to memory the way that we think of it as clinicians and define memory in our testing.

02:13:48 **Q.** I mean, there are all sorts, but you wouldn't agree with the statement that memory problems are frequently the first subjective cognitive complaint in Parkinson's disease?

A. I think it's often one of the first complaints for

02:13:59 someone who is having cognitive problems.

Q. Okay. Now, there are -- you described dementia as a catch-all, and Alzheimer's is another type of dementia. Correct?

A. Yes. Alzheimer's is another disease that can lead to

02:14:25 dementia.

Q. So, Alzheimer's is another disease that could lead to dementia. So, are you distinguishing between a biological Alzheimer's versus clinical Alzheimer's?

A. Yes. So, the biological processes in Alzheimer's begin, again, when people are cognitively normal, and they progress from those biological changes. So, the amyloid, the Tau changes, result in neurodegeneration, and that corresponds to the symptoms which progress from the normal stage, to the mild kind of impairment stage, to the dementia stage.

Q. And, so, Alzheimer's dementia would be a clinical diagnosis. Right?

A. So, Alzheimer's dementia would refer to a patient with dementia that is thought to be due to Alzheimer's disease.

Q. And that would be a clinical determination as opposed to -- In other words, you can't just look at a scan and say somebody has Alzheimer's dementia?

A. Right. So, you can't diagnose dementia based on the scan alone, but our definition has changed where for many of the definitions of Alzheimer's or other types of dementias, there is an acknowledgement of looking at the neuroimaging to determine if that is consistent with it.

So, in some of those it's the case that it is possible, if it's just the clinical symptoms, but it

becomes probable with the imaging that would go along with it.

Q. Yeah, it's almost -- at some point it's a technicality, it seems. So, if the brain is riddled with tangles and plaques and has hypometabolism and you just look at the brain, you are looking at the scan, you would completely expect it to be, you know, severe Alzheimer's dementia or end-stage Alzheimer's dementia, but you still couldn't diagnose it until they were -- you determined whether or not the impairment was affecting the person's, you know, life in certain ways. Is that accurate?

MR. MAGNANI: Objection. It is a confusing question. I didn't understand it. If you can break it up.

THE COURT: Yeah. The objection is sustained.

MR. LOONAM: Okay.

THE COURT: It's just -- if you can just rephrase it.

MR. LOONAM: Fine, Your Honor. Yeah. Sure. Sure. Sure.

BY MR. LOONAM:

Q. So, you know, the scans, the role of neurologists, the role of neuroradiologists, you see that there's -- after their opinion as to what the scan shows -- you know, I have seen in these papers, in the right clinical setting or -- or -- and is that because Alzheimer's dementia is a

clinical diagnosis?

MR. MAGNANI: Objection, Your Honor. Counsel is still testifying, talking about what he is seeing in papers.

02:17:24 THE COURT: Yeah. Can you rephrase the question again?

MR. LOONAM: Sure.

THE COURT: Just get him to agree on what you have seen as true and then ask him whether or not -- ask 02:17:34 him about the issue you want to ask him about.

BY MR. LOONAM:

Q. How do you diagnose Alzheimer's dementia?

A. So, the term "dementia" is referring to the cognitive severity. So, that's dependent on the severity of the 02:17:48 cognitive issues and how they relate to the functional impairment.

Alzheimer's is the reason -- is supported by certain features such as age and memory loss, but in our definitions, as those have changed, we have also 02:18:05 incorporated in the neuroimaging to show that there was damage or neurodegeneration and the areas that correspond with that.

Q. And you mentioned memory impairment. Memory impairment is the most pervasive feature of Alzheimer's 02:18:22 disease. Correct?

A. That is, yes.
Q. But, in addition, other cognitive deficits can manifest early in the disease. Correct?
A. Yes. Patients can have other cognitive deficits besides memory loss.
Q. And these non-memory cognitive deficits include impairment of executive function. Correct?
A. Are we talking about Alzheimer's disease?
Q. Yes.
A. I just wanted to clarify.
Q. Alzheimer's disease.
A. Yes. Some patients will have executive function problems as well.
Q. And, so, can you explain for us what "executive function" is?
A. So, those are things like decisionmaking. And, so, some of the ways that we're testing it in the clinical tests is we may ask someone to alternate between numbers and letters. So, they have to be able to go back and forth between those things and maybe generating a list of words that start with a specific letter. Again, can they generate those things. And, so, they're referring to those types of processes.
Q. And apathy -- is apathy a symptom of Alzheimer's disease?

A. Apathy can be a symptom of a number of different diseases.

Q. And can it be a symptom of -- an early symptom of Alzheimer's disease?

02:19:31 **A.** In some patients they will complain of apathy, although it's more specific for other diseases like frontotemporal dementia.

Q. Well, how does apathy manifest itself as a symptom in Alzheimer's disease?

02:19:43 **A.** So, a patient with apathy, in general -- and I think the term really just applies to any disease -- is really less motivation. So, it's being less motivated and less interested in certain topics.

So, someone may be not as motivated to

02:19:59 take care of their hygiene. They may be less interested in things that were of interest before.

Q. And is Alzheimer's disease reversible?

A. No. Alzheimer's disease is not reversible.

Q. And it's -- it's progressive, meaning a trend of a

02:20:19 downward trajectory. Correct?

A. Yes. So, we expect progression in Alzheimer's and these related disorders.

Q. And is it fatal?

A. Yes. So, typically, if a patient lives long enough

02:20:30 with Alzheimer's disease, it would be fatal.

Q. And do you -- do you have an understanding of the average life expectancy for an individual diagnosed with Alzheimer's disease?

A. Well, I think a ballpark figure for any of these types of neurodegenerative disorders would be approximately five to ten years.

Q. And in figuring out where an individual falls on that range, does age of diagnosis matter?

A. Yes. In terms of mortality, the older someone is, the more likely it is that they would have a death. And, so, they have other health issues. You know, the average life expectancy of an adult male is probably 78 or so. And, so, for an 80-year-old there are many other health issues that would contribute to that.

Q. And would you agree that the life expectancy for men diagnosed with dementia after 70 is about four years?

A. I think that that's a rough estimate. I wouldn't say that number specifically, but I think that that, you know, is approximately similar to that, that number that I stated.

Q. All right. Let's shift gears for a moment and discuss delirium. You discussed delirium during your direct. Mr. Brockman has had multiple episodes of delirium in the past year. Correct?

A. Yes, he has.

Q. How many?

A. So, in March of 2021, he was hospitalized with a urine infection and sepsis and had delirium documented at that time.

02:22:02 In early June or beginning in late May of 2021, he was hospitalized for a urinary infection that spread to his blood. So, he had sepsis and delirium.

And then he had another hospitalization, I believe, in September of this year for about three or four 02:22:17 days where he was hospitalized with a urinary infection and delirium.

Q. And the urinary infection, again, was urosepsis?

A. No. Sepsis refers to it spreading to the blood. I don't believe in those documents that there was a positive 02:22:32 blood test, but I could be wrong.

Q. Okay. And you described delirium as -- the symptoms -- you know, an acute variation or arousal. Is that right?

A. Well, there are a number of things that can go along 02:22:55 with delirium. So, it's -- I think the way I described it was an acute confusional state. But variations in the level of arousal would be one thing that you could see with that.

Q. Okay. During his -- his hospitalization from May 02:23:10 31st to June 11th, Bob was administered an antipsychotic

to treat him for his delirium. Correct?

A. Yes. I believe he was given a medicine called Seroquel.

Q. And then during his September episode of delirium at the hospital, there are reports that Bob became combative, had a fall out of bed, with the staff. Correct?

A. I believe I read that in the June hospitalization. I don't remember seeing that in the September hospitalization.

Q. It could be right, actually. My apology.

So, anyway, Bob had three episodes of delirium, to your knowledge, over a relatively short time span. Correct?

A. Over the course of a year, yes.

Q. Well, it was from March to September?

A. March to September.

Q. Yeah. So six months?

A. Yeah.

Q. Yeah. And delirium itself is often fatal?

A. Delirium can be fatal. So, again, it's a sign of a serious medical illness. So, anytime someone has an infection that spreads to the blood, that's a very serious condition.

Q. That's the sepsis, isn't it?

A. Yes.

Q. But delirium itself -- delirium itself is often fatal. Do you agree with that?

A. So, the delirium is reflecting the severity of the medical illness. So, it is when a medical illness is severe enough that there is inflammation that can affect the brain. That's what leads to delirium.

So, there is an increased association between delirium and mortality, and that's because the delirium reflects the severity of that medical illness.

Q. And the reoccurring episodes suggest that Bob's brain is vulnerable. Correct?

A. Yes. So, an 80-year-old with Parkinson's or some of these cognitive impairments -- you know, brain vulnerability would be one reason why someone gets delirium. Now, certainly someone with no vulnerabilities could have a serious infection and also be delirious. And, so, just the presence of delirium doesn't necessarily tell you that, but certainly that's a risk factor for developing it.

Q. And -- and then reoccurring bouts. So, three bouts of delirium over a six-month period would strongly suggest that Bob's brain is vulnerable?

A. Well, yes. So, I think, in the setting of these infections which he continues to get, he's continued to have experiences of delirium.

Q. Yeah. And, in fact, would you agree that delirium is a marker of brain vulnerability?

A. I don't know that I would characterize it that way. So, you know, again, I think that delirium can happen in patients without a vulnerability, but it is certainly a risk factor. So, patients who have brain vulnerabilities would be at increased risk of having delirium from the same infection.

Q. And you described -- well, what is "cognitive reserve"? Let's make sure we have got it straight here.

A. So, "cognitive reserve" is referring to the brain's ability or the person's ability to compensate for the diseases that they have in terms of their cognition.

Q. And the reoccurring bouts of delirium suggest that Bob's cognitive reserve is extraordinarily small at this point. Correct?

A. Well, again, I think that depends on the severity of the illness that he is having. And, so, when you have an infection that travels into the blood, that's a very serious infection. So, again, a normal person who has an infection going to their blood, I would expect them to be delirious.

Q. And in September I thought you said that it wasn't a blood infection. It was just a urinary tract infection that lead to sepsis -- I mean, that lead to delirium.

And so -- I mean, do you think -- and you certainly -- Does delirium suggest that Bob has a limited cognitive reserve, his reoccurring bouts of delirium?

A. I don't think that delirium specifically says that. I think that it can go along with people with brain diseases having a higher risk of delirium, but just the presence of delirium itself doesn't tell you that that's due to an underlying vulnerability or not.

Q. Delirium and dementia commonly coexist?

A. Yes. They can occur in the same patient.

Q. And commonly do?

A. So, when I am seeing patients in the clinic, no; but in a hospital setting, if someone were to have delirium, it's common for them to also have dementia.

Q. Well, is preexisting dementia the leading risk factor for delirium?

A. It is certainly one of the highest risk factors for delirium, yes.

Q. And you are not aware of whether or not it is the leading risk factor for delirium?

A. I am not aware of whether it would be the leading risk factor, but it is certainly a very strong risk factor for developing delirium.

Q. So, reoccurring bouts of delirium, vulnerability to delirium episodes, in and of itself can be a marker of

dementia?
A. I think it's marking two things. And, so, it's -- potentially, that would go along with someone having dementia. But it's also a sign that he is having
02:28:50 recurring infections that would lead to that state.
Q. And a single episode of delirium can result in a fundamental alteration in the trajectory of cognitive decline for persons with Alzheimer's disease. Correct?
A. Yes. So, an episode of delirium can cause a
02:29:07 progression to be more accelerated than someone who has not had an episode of delirium.
Q. And it can result in a dramatic increase in the rate of cognitive decline, a single episode. Correct?
A. A single episode can accelerate the course of
02:29:26 dementia.
Q. And the -- you know, multiple episodes, do you know whether the rate of increase in the progression is linear or exponential?
A. I don't know that -- I'm not aware of any studies
02:29:44 that looked at whether more than one episode of delirium increases that risk more.
Q. What is your understanding of how much one episode of delirium increases the rate of progression for Alzheimer's disease?
02:30:00 **A.** I don't have a specific number for that.

Q. Well, will you agree there are studies that find that it is over two times?
A. Again, I am not aware of the studies.
Q. So, you don't know?
02:30:16 **A.** No.
Q. Do you know whether or not -- Once the rate of decline is increased after an episode of delirium, it's irreversible. Correct?
A. So, once a patient has recovered from the delirium, 02:30:37 from those acute changes, if there is a progression over time, I would not expect that to be reversible.
Q. Okay. Is your expectation based on any academic literature?
A. Not anything specifically.
02:31:14 MR. LOONAM: One moment, Judge.
THE COURT: Sure.
BY MR. LOONAM:
Q. Are you familiar with the journal *The Archives of Internal Medicine*?
02:32:02 **A.** I'm not sure if I have specifically heard of that journal, but it sounds like a journal that would exist.
Q. Published by the American Medical Association.
A. Yes. I have heard of the American Medical Association.
02:32:14 **Q.** Okay.

MR. LOONAM: I'll mark it -- do we have stickers there? This is just for identification, Judge.

THE COURT: Okay.

BY MR. LOONAM:

02:32:43 **Q.** It's marked for identification as Defense Exhibit 49. Are you able to see this?

A. No.

THE CASE MANAGER: Bear with me.

MR. LOONAM: Actually, this is an easier one

02:33:41 for us to do. We will get through it quicker. I am going to mark this Defense Exhibit 50.

BY MR. LOONAM:

Q. Are you familiar with the journal *Lancet Neurol*?

A. Yes, I am.

02:34:04 **Q.** And that is a reputable journal?

A. Yes.

Q. *Lancet* is one of the most respected medical journals in the country?

A. Yes. I think the *Lancet* journal is a very respected

02:34:16 journal.

Q. I am going to show you what is marked as Government's Exhibit 50. Can you see that?

A. Yes, I do see that.

Q. Okay. It's an article titled "The Interface of

02:34:25 Delirium and Dementia in Older Persons."

A. Yes, that is the title I see.

Q. Yeah. And the author is Fong?

A. Yes, Tamara Fong.

Q. I'll show you the highlighted sections here.

02:34:43 It says: "Delirium is a syndrome manifesting as an acute change in mental status that is characterized by inattention and disturbance in cognition that develops over a short period of time and tends to fluctuate." Do you agree with that?

02:35:00 MR. MAGNANI: Objection --

THE COURT: Okay.

MR. MAGNANI: -- just to -- apologies, Your Honor -- just to the extent he is asking the witness about an article the witness has never seen before. If he wants

02:35:08 to ask whether he agrees to a statement, that's one thing, but to read from a journal article that is not in evidence --

MR. LOONAM: I just read and said does he disagree with it.

02:35:18 MR. MAGNANI: If you want to just ask him a question and ask if he agrees with that statement, that's one thing, but --

THE COURT: Wait a second. What is the objection?

02:35:24 MR. MAGNANI: The objection is that he is

reading from a piece of paper that is not in evidence. If he wants to impeach by asking the doctor if he agrees with a certain proposition, he can ask the doctor without flashing around journal articles that are not in any expert
02:35:39 reports.

MR. LOONAM: Your Honor, Federal Rule of Evidence 803(18)(A), it's a learned treatise, periodical or pamphlet on the cross-examination of an expert witness. The rules specifically provide for this.

02:35:51 THE COURT: Yes. I'm sorry. So, you can use it, but it's the way you are using it that I have a question about. I mean, you need to lay a foundation. And you have gotten most of the way there, but you need to ask him whether or not -- you need to ask him the question that
02:36:07 the treatise addresses and whether he agrees with it or not, and then you can go into the treatise.

MR. LOONAM: I asked him if he agreed on whether the rate of progression for a single episode of dementia -- of a single episode of delirium increased the
02:36:26 decline and progression of dementia two-fold. Right? And he said no.

THE COURT: That's the question. And then his answer?

BY MR. LOONAM:

02:36:37 **Q.** Your answer was? I'll ask the question.

A. So, that was to whether I agreed with that number, and I said I didn't -- I believe I said I didn't know or didn't have a number.

THE COURT: Okay. And this is going to provide a number?

MR. LOONAM: Is going to provide a number.

THE COURT: Okay. Objection overruled.

You may proceed.

BY MR. LOONAM:

Q. I'll show you the highlighted section here. "Delirium resulted in a fundamental alteration in the trajectory of cognitive decline with a two-fold acceleration in" --

THE COURT: One second. It's out of focus. It's giving everybody a headache. So, can you just --

MR. LOONAM: Thank you, Judge. How do I do it?

THE COURT: There we go.

MR. LOONAM: Thanks, Judge.

BY MR. LOONAM:

Q. "Delirium resulted in a fundamental alteration in the trajectory of cognitive decline with a two-fold acceleration in rate of decline over the year following hospitalization and accelerated decline persisting over the entire five-year follow-up period. The study was highly significant in demonstrating that in persons with

AD" -- Alzheimer's disease -- "delirium resulted in a dramatic increase in the rate of cognitive decline over time and this change appeared to be irreversible."

Do you have any reason to question the findings recorded in this study?

02:38:12

A. Well, I would need to look at that actual study. So, this is citing a different study, I believe.

Q. Yeah. It's right here. This is Government's Exhibit 49.

02:38:26

MR. MAGNANI: And objection again, Your Honor, this time on 403 grounds. These are long studies. To ask the witness to give opinions on studies he has never read is 403, Your Honor. It just a waste of the Court's time and its probative value is substantially outweighed by that.

02:38:40

THE COURT: Well, no. He can ask -- he can ask the question about the treatise. The witness -- if the witness needs more time to look at it, he can ask for more time. If the witness wants to look at something in the treatise, the witness can ask for it. But he can -- but he can question the witness about it, and the witness can ask for more time if he needs it.

02:38:53

MR. MAGNANI: Oh, apologies. One more thing. I believe, counsel, you might have said "Government."

02:39:08

MR. LOONAM: Defense exhibit. I just got that

note. Old habits die hard, Judge. Twelve years.

THE COURT: Okay.

BY MR. LOONAM:

Q. So, I am showing you Defendant's Exhibit 49. You had stated you had wanted to see the article they were referring to. This is the article they were referring to. This is *The Archives of Internal Medicine*. The title is "Delirium and Long-Term Cognitive Trajectory Among Persons with Dementia." Do you see that?

02:39:33 **A.** Yeah. It's cutting off on the screen here.

Q. Oh. Let's get it so you can see it. Is that better?

A. I see it on this larger screen.

Q. Okay.

A. I think it cuts off the side on this screen.

02:39:43 **Q.** Let me see if I can -- Is that okay for you now?

A. I can see the title, yes.

Q. Okay. And I'll just use a highlighted version which will make it easier for everyone.

So, the background of the study is: "We

02:40:12 examined the association of delirium with long-term cognitive trajectories in older adults with Alzheimer's disease." Correct?

A. That's what is highlighted.

Q. I'll take you right to the findings here. And we can

02:40:38 provide this study to you, but it's -- it reads in the

highlighted portion: "This deterioration was significantly greater in the delirium group, difference, 1.7," and then some statistics, "and remains so through the end of the study period. The ratio of these group
02:40:59 differences suggested that delirium is associated with a 2.2-fold increased rate of cognitive deterioration in the" -- "in the year following the index hospitalization, and with a 1.7-fold increase rate of cognitive deterioration during the five-year period following the
02:41:27 index hospitalization. We could normalize this for the gender."

Does gender usually play an issue in rates of decline for dementia?

A. So, we would always evaluate gender, age, other
02:41:40 factors.

Q. Yeah. Yeah. So -- so -- but do you have any reason to question the -- the -- the summary -- the description of this article I read to you before where it said the trajectory of cognitive decline -- and this is
02:41:58 Government's Exhibit 50 -- is a two-fold acceleration rate?

A. Again, I would have to read the entire article to comment on that.

Q. You don't know?

02:42:07 **A.** Correct. I have not read that article.

Q. And if that's what happens with respect to one episode of delirium, you don't know what would happen with two episodes of delirium with respect to the rate of cognitive decline. Correct?

02:42:26 **A.** I'm not aware of a specific study that has looked at that.

Q. And you are not aware of a specific study that has looked at it that would inform your judgment on that issue, then. Correct?

02:42:37 **A.** Correct. I would not be relying on any piece of literature for that.

Q. And then, certainly, with three episodes of delirium, you wouldn't have -- you are not aware of a study that would support your judgment on how three episodes of

02:42:57 delirium would affect an individual's rate of decline?

A. I am not aware of any studies that looked at three episodes of delirium versus one.

Q. And so -- Okay. You had the -- there was a scale up on your slides that -- that listed the different

02:43:35 severities for dementia before, in your slide deck. Do you recall that?

A. Yes. I believe so. Oh. Yes.

Q. And where was that taken from? Was that -- was that -- That was a summary document. That wasn't a

02:43:52 scientific document, was it?

A. No. So, that was not taken from a specific source. It was kind of a summary of examples from various sources and based on my experience as well.

Q. All right. So, that -- that -- that's made up? That is not sort of an actual scale?

A. The scales -- the -- I'm not sure I quite understand your question.

Q. I am saying this -- this -- the dementia severity -- and you have listed mild cognitive impairment and then sort of with a description underneath it, mild dementia with a description underneath it, moderate dementia with a description, and severe dementia. That's -- this doesn't come from some source where they -- they rank these things?

A. Those aren't specific criteria. Those are examples of problems that may happen in a patient with that state of severity.

Q. Are you aware of the clinical dementia rating scale?

A. Yes.

Q. And that actually has formal criteria for distinguishing between mild dementia, moderate dementia, severe dementia, mild cognitive impairment. Correct?

A. Well, the -- the clinical dementia scale is a clinician's estimate of six different categories of problems: memory, orientation, ability to do different

functions. It's rated on a scale from zero being normal to 0.5 being very mild, and then 1, 2, 3 being mild, moderate, severe. And there is, I believe, an algorithm to take those numbers and turn them into a global measure or a global CDR number.

Q. And do you agree it is one of the widely accepted means for categorizing where a patient is on the continuum of decline for dementia?

A. It is -- it is one of the things that we use in our clinical research studies.

Q. Well, in addition to clinical research studies, do clinicians use it in -- in, you know, sort of categorizing where, you know, patients fall with respect to their level of impairment?

A. That is one of the ways that a clinician would evaluate that.

Q. And it considers performance in six domains. Do you know what they are?

A. I believe it's memory, orientation. There is a domain for personal care, home and hobbies, other activities of daily living. I can't remember the last category.

Q. Sure. Judgment?

A. Judgment.

Q. Problem solving?

A. Judgment and problem solving.

Q. Yeah.

A. There's different versions that include domains for behavior and language in the frontal type of dementia as well.

Q. Well, are you familiar that the definitive version comes from Morris, do you know, from Washington?

A. From the Your University of Wash --

Q. Yeah.

A. -- from Washington University?

Q. Yeah. And it's put out by John Morris.

A. I believe he was the first person that developed it, yes.

MR. LOONAM: And 51. I am marking it as 51 for identification. I'm just going to put it on the ELMO.

THE COURT: Counsel, have you already -- I mean, I'm just -- I want to make sure. You have already seen this or have you taken a look at it?

MR. MAGNANI: No. I want to see it on the screen, Your Honor. I am not too concerned with any of it, though.

THE COURT: I just wanted to know if you wanted to see it before it was put on the screen. No problem.

MR. MAGNANI: If you proffer it --

MR. LOONAM: Yeah. It's in the folder. I just

don't want to waste anyone's time.

THE COURT: Okay. It's not a problem.

BY MR. LOONAM:

Q. Do you recognize this?

02:48:19 **A.** Yes. This is referring to the clinical dementia ratings scale.

Q. And it has "severe dementia" all the way to the far right, "moderate dementia," "mild dementia," "questionable." Is that -- would that be associated with

02:48:41 mild cognitive impairment?

A. Yes. For the global measure, 0.5 is typically considered to be mild cognitive impairment.

Q. And then none is zero there. Correct?

A. Correct.

02:48:54 **Q.** And if you -- you look at this, in the progression, in the first column, it lists, you know, the different domains that we discussed. And if we go across them for -- for memory and you go to "mild dementia," the memory -- the clinical symptom for mild dementia is

02:49:27 "moderate memory loss, more marked for recent events. A defect interferes with everyday activities." Correct?

A. That's what it states here, yes.

Q. And, so, it's not intuitive, that, you know, mild dementia doesn't result in -- isn't associated with mild

02:49:48 memory issues. It's associated with moderate memory

issues according to the scale. Correct?

A. Yes. I think it's important to consider the scale was developed for the assessment of Alzheimer's disease. And, so, for Alzheimer's disease specifically the memory is the earliest and most predominant feature; and, so, it's designed with that in mind.

Q. And if you go down to "Judgment and Problem-Solving" for mild dementia and you go across, it says: "Moderate difficulty in handling problems, similarities and differences, social judgment usually maintained."

So, again, mild dementia is associated with moderate difficulty in problem-solving and judgment?

A. And that is where I would say that examples like financial decisionmaking, the ability to work, that's where those would be affected.

Q. So, financial decisionmaking. Is that why, you know, people with early Alzheimer's are often victims of financial scams?

A. That can be one reason. There is also an increased social trust that can happen in older persons that makes them more vulnerable to those.

Q. And if you combine that with Alzheimer's, it means a person can be extraordinarily vulnerable, I would expect.

A. Yes. Anytime someone is having a cognitive problem that can lead to a vulnerability.

Q. And certainly somebody with moderate memory problems could have a problem -- could have an issue and could have an impairment in communicating relevant information to counsel. Correct?

02:51:24 **A.** Can you restate that?

Q. Sure. An individual with moderate memory problems could have an impairment in communicating relevant information to counsel?

A. I think it depends on the specifics of the memory

02:51:38 problem.

Q. But, if it's a moderate memory problem, you don't think that that, in and of itself, means that the person could have a problem communicating relevant information to counsel?

02:51:48 **A.** It would say what it states here, which is that there would be difficulty with remembering recent events. So, to the extent that that would interfere with helping counsel, then, yes, that would be present.

Q. And, so, you know, if counsel gives advice to a

02:52:07 client and the client can't remember that advice, do you think that would interfere with the ability to advise that client?

MR. MAGNANI: Objection, Your Honor. This is an opinion question that is beyond the scope of his

02:52:22 expertise. He hasn't been designated as any competency

expert, and he has said on direct he doesn't know much about that.

THE COURT: I guess the objection is sustained in part. I mean, what you can ask him -- you can ask him specific things like would he be able to understand questions? Would he be able to understand the contents of documents? But whether or not he would be able to communicate regarding legal issues -- I don't know how this witness can testify about that. He can testify about specific skills that Mr. Brockman might or might not have, and you can ask about that.

MR. LOONAM: I can -- Yes, Your Honor. Yes, Your Honor.

THE COURT: So, go ahead and break it down.

MR. LOONAM: Sure.

BY MR. LOONAM:

Q. And, so, somebody with moderate memory issues such that it is more marked for recent events, that doesn't exclude having memory issues for remote events?

A. Well, it follows a phenomenon we call Ribot's law. And, so, the recent memories are the things that are going to be damaged first and the most significantly. So, typically, the farther away that is from the recent time the more likely it is the patient is going to be able to remember it.

Q. So, for example, a client hearing a witness' testimony may not be able to give his input on cross-examination to his counsel?

MR. MAGNANI: Objection, Your Honor. The same objection.

02:53:49

THE COURT: Yeah. I mean, the -- the objection is sustained.

I mean, you can ask him about specific skills but not general, you know, what a client could or could not do.

02:54:03

I mean, you know, could he answer a question regarding whether or not something happened or didn't happen on a certain date? Yes or no. Could he respond on whether or not he signed or didn't sign a document? Yes or no. But you can't ask the question, 'Well, would he not be able to help his counsel represent him adequately at trial?' That is beyond the scope of this witness' testimony.

02:54:14

MR. LOONAM: Okay, Your Honor. I will say I think in the expert report the witness did opine on whether -- or decided he couldn't opine on Mr. Brockman's cognitive ability and, therefore, couldn't reach the issue of whether he was competent to assist counsel, but I believe reached that issue previously in his first report. So -- but, nevertheless, I'll ask it this way.

02:54:28

02:54:51

BY MR. LOONAM:

Q. Dr. Darby, somebody with moderate memory issues, who is hearing information, may have an issue retaining that information to -- to convey it or to convey their analysis of that information to another person. Correct?

02:55:12

A. So, someone at this mild stage of memory problem, having these moderate memory issues, would have the most difficulty remembering something that's happened now and remembering that in the future. They would have less of a problem remembering things that are farther in the past.

02:55:29

Q. But if they were hearing somebody speak now, right, and then having to -- they would have issues retaining that, to then address the consequences or the import of whatever was said to another person, that would be an issue?

02:55:50

A. It would depend on the timing between that. And, so, you know, at a time after they initially heard that, they would have difficulty retaining that memory. That would be the memory problem.

Q. And if you have moderate difficulty solving problems, you would have -- you could have issues processing complex sets of facts. Correct?

02:56:02

A. Yes. So, at this one rating scale that you are referring to, that would be where you would need assistance to help with things like financial

02:56:27

decisionmaking and that the complexity of certain types of jobs would be impacted where someone wouldn't be able to do that independently.

Q. Now, when you move to "moderate dementia" and you looked for --

A. So -- I just want to clarify it. So, these are in each individual category, but there is actually an algorithm that takes those numbers and turns it into a global dementia number. And, so, you know, being in one of those categories or two doesn't necessarily mean that's the moderate dementia. It is moderate in that category. I don't know the specifics of the algorithm to calculate that.

Q. No. But I am talking that -- but that's -- this is the -- this is the criteria for that domain, for that category of dementia?

A. So, that --

Q. You need not have all of the categories in order to fill. That's the algorithm, right? But this is -- according to the -- the CDR, that is the level of decline in that domain for that level of dementia?

A. I don't think that's accurate to what -- to what it's stating. So, that's the level of severity in that domain. And then the global -- So, there is a summary number that comes out of this that refers to the actual dementia

stage.
Q. But that's the -- but that's the severity with respect to that domain. Correct?
A. Correct.
02:57:58 **Q.** Yes.
When you move to "moderate dementia," the memory issues aren't moderate. It's severe memory loss, correct?
A. And, again, are you referring -- is the moderate
02:58:10 severity within the memory domain?
Q. In the memory domain, if you go across to "moderate" --
A. Yes.
Q. -- it is severe memory loss. Correct?
02:58:17 **A.** Correct. That's what that says.
Q. I am pointing it out because it is not intuitive. When you hear "moderate dementia," you would think moderate memory loss, but this is associated with severe memory loss. And it says "only highly learned material
02:58:32 retained."
So, what is that? Once you cross into the "moderate dementia" category, that only -- at that point only highly learned material is retained, how does that happen?
02:58:41 **A.** Well, that's referring to some of the examples that

were on the slide. So, things like not recognizing a grandchild. So, someone who has been more recently introduced or a friend who is not as close. It may be forgetting things like addresses and phone numbers that can be affected. So, those are some of the examples of not recognizing people, kind of not being able to retain those things.

02:58:55

Q. But -- but it -- it would go beyond that. It is only highly learned information that's retained. And, so, do you have an example of highly learned information?

02:59:14

A. So, a patient's birth date would be an example of that.

Q. So, somebody would remember their birthday?

A. Correct.

Q. But -- but they may not remember, you know, going to dinner two weeks ago?

02:59:26

A. Correct. They would have difficulty remembering the specifics of where they went to dinner two years [sic] ago.

Q. And they would have difficulty remembering a conversation from six months ago?

02:59:43

A. I imagine, yes, that they would have difficulty remembering a conversation.

Q. Highly learned material, can that be by subject matter where somebody sort of dives into something and

02:59:59

that's their passion and that becomes highly learned material?

A. That can be a type of highly learned material.

Q. And is it because, when it is highly learned, it is coded in different parts of the brain sort of redundant so that when there is recall, it can go from -- if there is brain damage, it may exist somewhere else?

A. Well, there still may be difficulty with the recall. So, I think that's a separate issue. But it is coded in a way that it's represented in different parts of the brain.

Q. Yes. So, there's a redundancy with respect to highly learned information. Correct?

A. Yes. It's just represented in a different way.

Q. All right. And by the time you get to severe memory loss -- I mean, severe dementia with respect to the memory domain, it's still severe memory loss, but it's described as only fragments remain. And, so, what does that look like?

A. I mean, that might be a patient who is in a nursing home and, so, is having difficulty recognizing their familial loved ones, like a spouse, that they would have otherwise.

THE COURT: Counsel, we have been going an hour and half. So, we are going to go ahead and take our break now. I am going to suggest 15 minutes. If you guys need a

little bit longer, please let me know. I know that everyone has their concerns about getting people back and forth. So, if anyone needs longer than that, just let my case manager know and we can take longer. But if we can all be back at 3:15, and then we will push on through the rest of the afternoon.

MR. LOONAM: Thank you, Judge.

(Proceedings recessed from 3:01 to 3:28)

THE CASE MANAGER: All rise.

THE COURT: Please be seated, everyone.

MR. LOONAM: Your Honor, just one or two more questions on Exhibit 51, and I am going to move on.

THE COURT: Okay. You may proceed when ready.

MR. LOONAM: Thank you, sir.

BY MR. LOONAM:

Q. I am putting Exhibit 51 back on the screen. Can you see that?

A. I can. The -- the -- it's the right side, the "severe," I can't see on my screen, though. Yeah. Most likely I can see the table.

Q. Okay. So, for the "personal care" domain, it may be self-explanatory, but what is your understanding of what that is?

A. So, that's referring to a patient's ability to take care of themselves.

Q. And that's impacted by the severity of dementia. Correct?

A. Yes. So, dementia can impact the patient's ability to do personal care.

03:29:45 **Q.** And for -- for "mild cognitive impairment," the person just is fully capable of taking care of themselves, correct, as to this domain?

A. Yes.

Q. And for the "mild dementia" category, for the

03:30:06 "personal care" domain, the person needs prompting to -- to take care of themself?

MR. MAGNANI: Objection, Your Honor. It's a lot of times that counsel keeps saying the mild dementia range, but the witness has said many times that the words

03:30:20 on the top like "mild," "moderate," and "severe" don't correspond to dementia. And counsel keeps repeating "the mild dementia range," the "moderate dementia range."

MR. LOONAM: No, I don't think he said that. I think what he said was that each individual category and

03:30:38 domain gets scored and you wind up with a global score at the end that's attributable to -- but for the -- for each domain it's associated with a certain degree of dementia.

A. No. So, it's the impairment. And, so, it's a mild, moderate, or severe impairment. And then that is

03:30:58 calculated into a global measure that defines the dementia

rating. So, the global CDR is what refers to the level of dementia.

Q. Uh-huh.

A. Within each domain we would refer to that as the level of impairment in that domain.

Q. Okay. So, for somebody --

THE COURT: Thank you, Doctor.

Q. -- with moderate impairment, they would require assistance in dressing, hygiene, keeping of personal effects?

A. Yes. That's what it says here.

Q. And for -- with severe impairment, the person would require much help with personal care, and they would have frequent incontinence. Correct?

A. Yes. That's what it says here.

Q. And -- Okay.

MR. LOONAM: Just collect it at the end?

MR. MAGNANI: Yes.

BY MR. LOONAM:

Q. Let's talk about the neural imaging. I know you talked about it a lot on direct, but let's cover it for a bit.

In March you asked Mr. Brockman to undergo a PET scan?

A. An FDG PET scan, yes.

Q. Yeah. And you requested the PET, at least in part, to see if there was objective evidence that Bob had a neurodegenerative disease. Correct?

A. Yes. I thought it would be helpful in this case for looking for evidence of neurodegeneration.

Q. And Bob submitted to that PET scan on March 12th, 2021?

A. Yes. I believe so.

Q. And the scan was read and interpreted by a nuclear medicine specialist at Houston Methodist Hospital. Correct?

A. Yes. That's the report we looked at earlier.

Q. And that -- the specialist was Dr. Ronald Fisher. Do you recall that?

A. I don't recall the specific name of the radiologist who read it.

Q. Do you think if I show you the scan, would it refresh your recollection or --

A. Yeah. I mean, whatever was on the page would be what the name was.

Q. Okay. So --

A. I don't remember that off the top of my head.

Q. So, for efficiency, you can take my word that it was Dr. Ronald Fisher.

A. That wouldn't sound surprising.

Q. And, to your knowledge, Dr. Fisher was not retained by -- by either party, right?

A. Not that I know of.

Q. And that -- Dr. Fisher just happened to be on duty at Houston Methodist to read the scans?

A. So, yes, typically, it would be whoever was the radiologist in charge of reading those scans that day that would interpret it.

Q. And you have no reason to question Dr. Fisher's competence. Correct?

A. No.

Q. You have no reason to believe that Dr. Fisher was unduly influenced in interpreting the scan, do you?

A. No. I would have no reason to believe that.

Q. And, in looking at the scan, the report stated that the findings are very mild but suggestive of early neurodegenerative disease, either Alzheimer's disease or dementia with Lewy bodies, Parkinson's disease with dementia. Correct?

A. That is, I believe, what was stated in the impressions, yes.

Q. And that's DX-39. Do you have your June 18 th, 2021, report in front of you or not?

A. No.

Q. Okay. It's Government's Exhibit 38.

MR. LOONAM: May I approach, Your Honor?

THE COURT: You may approach.

MR. LOONAM: It is an unmarked copy. Do you have a copy of this?

BY MR. LOONAM:

Q. Can you look at Page 7 of your report and locate the paragraph that discusses the March 12th, 2021, scan?

A. Yes.

Q. Okay. Now, you did not include this paragraph here in your report that "The findings are very mild but suggestive of early neurodegenerative disease, either Alzheimer's disease or dementia with Lewy bodies, Parkinson's disease with dementia." You didn't quote that in your report. Correct?

A. No, I didn't quote it here.

Q. Okay. And this paragraph appears in sort of like a medical -- a neurological history of Mr. Brockman. Correct?

A. This was in the history of reviewed information, yes.

Q. Yeah. So -- so, basically, the doctors' notes, the hospitalization records, those are described here. Correct?

A. Yes. This describes the hospital records and the diagnostic tests, in addition to other things.

Q. And Dr. Fisher did not indicate mild cognitive

impairment in his report. Correct?
A. No.
Q. And the scan showed hypometabolism in the right parietal lobe?
03:36:57 **A.** Yes.
Q. And hypometabolism shows neuronal -- neuronal -- I am going to mispronounce that -- but a dysfunction of the neurons. Correct?
A. So, it's indicative of brain dysfunction or brain
03:37:11 damage, yes.
Q. Basically, the neurons aren't eating?
A. That area of the brain is not using as much energy as it normally would.
Q. The brain runs on, basically, pure sugar?
03:37:25 **A.** It's a little more complicated than that, but as a general rule, yes. The sugar is the source of energy for the brain.
Q. By the way, what is -- is most of the brain made up of neurons or some other substance?
03:37:36 **A.** There are other things that are in the brain as well.
Q. What's the -- what percentage of the brain consists of neurons?
A. I don't know what the exact percentage is. It would probably differ if you were going by weight or the number
03:37:51 of cells. But there are a number of other cells that are

in the brain that support the function of the neurons, the blood vessels going to different areas.

Q. I am going to mispronounce this, but are there "gu" cells? "Gu"?

03:38:05 **A.** I am --

Q. Well, tell me what does the brain mostly consist of?

A. Are you saying "glial"?

Q. "Glial."

A. Oh, yes. Glial is a type of cell that can be in the

03:38:15 brain.

Q. And what type of -- what percentage of the brain is consisted of glial?

A. I don't know off the top of my head what that percentage would be.

03:38:22 **Q.** Are neurons a small percentage of -- of the brain cells?

A. I think, again, that would depend on if you are talking about the weight, the size, or the number of the neurons. It is certainly a part of the body. So, the

03:38:37 neurons are not the only thing there. There are a number of cells that are supporting the neurons, and then there are cells that are involved in blood transfusions for those areas, among other things.

Q. Keep the neurons healthy, hopefully. Right?

03:38:51 Okay. You -- you wrote in your report,

back on Page 7 -- I'm sorry -- if you want to flip -- because I want to make sure you're back on Page 7 at the paragraph. Are you there?

A. Yes.

03:39:04 **Q.** Okay. You wrote in your report that "These findings do not fit the typical pattern seen in dementia with Lewy body, Parkinson's disease dementia, or Alzheimer's disease." Do you see that?

A. Yes, I see that.

03:39:20 **Q.** All right. So, now, that was your opinion, not Dr. Fisher's opinion. Correct?

A. Correct. I was, again, comparing it to that image I have in my head of what the normal, typical patient with Alzheimer's disease dementia would look like.

03:39:38 **Q.** And that opinion somewhat contradicts Dr. Fisher's finding that the PET suggested either Alzheimer's disease or Parkinson's disease dementia. Correct?

A. Well, I think that it could suggest early Alzheimer's disease. Again, with the term Lewy body or Parkinson's

03:39:56 disease dementia, the most specific thing would be the occipital lobe findings, which were not present in this case. So, I think it can go along with those diseases, but doesn't fit the classic pattern that we would normally see.

03:40:09 **Q.** You're talking about the -- the typical pattern of

where you see impairment in the different regions of the brain. Is that accurate?

A. Yes.

Q. Okay. Do you reference that in your report, like what, you know, you support for that proposition at all?

A. I do not mention the different parts of the brain that I -- in this paragraph. I'm not sure if I mention them other places.

Q. Okay. You are not sure if it's in your report at all, either your supplemental report or your original report?

A. I don't recall if I had mentioned the specific areas of the brain.

Q. The specific areas of the brain or any scientific support for the idea that there is a typical pattern for Alzheimer's disease in the brain.

A. Are you asking if I cited any papers?

Q. Yes.

A. So, I did not cite any papers.

Q. You didn't cite any papers in any of your reports?

A. I don't believe I cited any papers regarding that issue.

Q. So -- Okay. Now, neuroimaging studies of Parkinson's disease dementia and Alzheimer's disease have both been particularly heterogenous. Correct?

A. That is one thing that you would look at in terms of studies, is the heterogeneity of the sample itself. I'm not sure if that's what you're referring to.

Q. Well, it could be heterogenous with respect to the groups but then, also, when you boil it down to the individual level, isn't that correct?

A. There can be heterogeneity in terms of individual patients and where they have abnormalities.

Q. And, in fact, in Parkinson's disease dementia, hypometabolism has been reported in the frontal, temporal, parietal, occipital, insular cortices as well as numerous subcortical regions. Correct?

A. I don't have the specific references that you're pointing to, but, in general, there have been a number of different brain regions, you know, that essentially refers to most regions in the brain.

Q. Are you familiar with the journal *Brain Communications*?

A. Yes, I am.

Q. Are you familiar with an article "Neuroimaging in Parkinson's disease dementia: Connecting the dots"?

A. Yes, I am.

Q. Are you familiar with it because you're one of the authors of the article?

A. I was a co-author on that study, yes.

Q. All right. I am showing you what is marked as Defense Exhibit 52. Do you recognize the article?

A. Yes, I do.

Q. And zoom in. Yeah. I'm sorry. I am -- This is what happens after we're in lockdown for a year. I forget the ELMO tricks.

THE COURT: Everything is done with screen sharing.

MR. LOONAM: That's right. I can Zoom with anyone.

BY MR. LOONAM:

Q. So, in this article that you wrote, you wrote that "Dementia is a common and debilitating aspect of Parkinson's disease." Correct?

A. So, I was not the person that primarily wrote this, but that is what that says, yes.

Q. So, when you're a co-author do you review the material before it's published, or do you not review the material before it is published?

A. I do review the material.

Q. And do you agree with the material in order to keep your name on it or -- do you agree with the material, to keep your name on it?

A. Yes. So, in general, I would review the material and agree with the contributions that we made to that.

Q. Okay. So, at least as of the time that this article was published, you believe that dementia was a common and debilitating aspect of Parkinson's disease?

A. Yes. It says here that 50 percent of patients will develop that within ten years of their initial diagnosis.

Q. That's right.

A. And that's citing a study Williams and Gray, et al.

Q. And some people can develop Parkinson's disease young, correct?

A. Yes, some patients can develop it young.

Q. Yeah. And then the average age of the onset is about 65. Is that about right?

A. That sounds about right. I don't have an exact estimate, but in the mid-60s to 70s I think would be accurate.

Q. Yeah. And somebody who is diagnosed with -- And age is -- is one of the highest risk factors for developing dementia, correct?

A. Just across any type of dementia, yes, it increases as we age.

Q. And, so, somebody who develops Parkinson's disease at a -- an age that is above the mean age would be at a likely even greater risk of developing dementia even sooner. Correct?

A. Based on their age, they would be at a very high risk

of developing dementia.

Q. And then, to turn bark to the original issue about the heterogeneity of neuroimaging studies for Parkinson's disease dementia, in this article, you wrote: "Neuroimaging studies of Parkinson's" -- "PD" -- "Parkinson's disease dementia have been particularly heterogenous with atrophy or hypometabolism reported in frontal, temporal, parietal, occipital and insular cortices as well as numerous subcortical regions."

03:47:11 03:47:36 03:48:02 03:48:19 03:48:41

So, at least as of the publication of this article, you knew that those regions -- those various regions of the brain had -- had been observed as impaired because of Parkinson's disease dementia. Correct?

A. Yes. So, that's referring to different studies, not different patients. I mean, in different studies they have reported different areas involved in that, yes.

Q. Yeah. So, different groups of patients. Correct?

A. Correct.

Q. And then the study went on to say: "An assumption underlying many conventional neuroimaging studies is that abnormalities should be localized to specific brain regions in order to explain specific symptoms."

So, as of 2019, when this article was published, you agreed that conventional studies were making this assumption about -- that abnormalities should

be localized to a specific brain region. Correct?

A. Yes. And is really reflective in a lot of the research that I do.

Q. And this is -- this is with respect to the research on mapping, as to the different regions and how they're connected to networks. Correct?

A. Correct. So, for the example of memory, you may have several different areas of the brain that are involved in memory, and it's the cumulative damage to those areas that would lead to the severity of the symptoms.

Q. And that's trying to explain the heterogeneity of how you could have a disease that affects and manifests itself in individuals so differently. Correct?

A. Well, this is really referring to the symptoms -- symptoms in those diseases.

Q. And the symptoms -- when you look at a scan, the two scans could appear identical but affect individuals completely differently. Correct?

A. So, it could involve different areas of the brain. And, so, one patient may have damage to one area of the brain, another patient may have damage to a different area, and both of them lead to a memory problem, if that's what you're asking.

Q. No. What I am saying is you could have two scans that show the same level of impairment to the same part of

the brain, but it would manifest itself in those two individuals clinically, potentially, in completely different ways?

A. So, you are saying the same brain image -- or the same amount of damage in two different people might present with different symptoms?

Q. Correct.

A. Yes. That was something that we talked about with the idea that the imaging is not a one-to-one correspondence. So, there is the brain's -- that person's ability to compensate for those problems that can affect that translation.

Q. There is nuance to it?

A. There is, yes. It's not a one-to-one correspondence.

Q. Sorry. I want to -- we are going to turn back to your report, so you could put that aside.

And here, after you described the typical pattern seen in dementia with Lewy body, Parkinson's disease or Alzheimer's disease, you wrote that -- Government's Exhibit 38. Let me see if I have a clean copy of it.

MR. LOONAM: Do you have a clean copy of 38 there?

I'm sorry. I'm just going to put it up. Sorry.

BY MR. LOONAM:

Q. You wrote: "Although the radiologist commented that it remains possible, these could be early findings for one of these disorders developing in the future."

03:52:20 Do you see that?

A. Yes.

Q. Okay. I am going to go back. I am going to put Exhibit -- Defense Exhibit 39 on -- The impression here was "Findings are very mild but suggestive of early

03:52:41 neurodegenerative disease, either Alzheimer's disease or dementia with Lewy bodies, Parkinson's disease with dementia."

So, the findings suggested present early neurodegenerative disease, not as you report -- issued in

03:53:00 your report, that it remained possible that this could be early findings of one of these disorders developing in the future. Is that -- is that just a mistake?

A. Well, the radiology report said that they were early findings suggestive of a neurodegenerative disorder, yes.

03:53:20 **Q.** No. It's not early findings. It said the findings were mild.

A. Were very mild, suggesting early neurodegenerative disease.

Q. Yeah. So, early -- so early Alzheimer's, early

03:53:33 dementia with Lewy bodies, early Parkinson's disease with

dementia. Right? So, suggestive of early neurodegenerative disease, either Alzheimer's disease or dementia with Lewy bodies.

So, early dementia with Lewy bodies, early
03:53:47 Alzheimer's, is different than early findings for one of these disorders developing in the future. Do you agree?

A. So, I think that the findings of the PET scan in the report are consistent with him being at a level of mild cognitive impairment from these disorders, which was my
03:54:08 opinion.

Q. But you wrote it as -- although the radiologist commented that it remains possible that these could be early findings for one of these disorders developing in the future, so you wrote it as the radiologist stating it,
03:54:26 didn't you?

A. Yes. So, this wasn't quoted and is different from what they say in the radiology report.

Q. So, you don't think this is a mistake? You still think that this is accurate and it was purposeful?

03:54:38 **A.** Well, I think it is different than what was in the report. I think this is my interpretation. And, so, attributing it to the radiologist -- that's not exactly what they said.

Q. Okay. So, what you're saying is, when you said this,
03:54:51 although the radiologist commented that it remains

possible these could be early findings for one of these disorders developing in the future, you didn't mean that it was the radiologist's comment?

A. I think that's my interpretation of what their comment meant in this case.

Q. You finished medical school in 2011?

A. Yes.

Q. You then moved on to your residency. Correct?

A. I did a year of an internal medicine internship and then went on to my residency.

Q. Okay. And you finished your residency in 2015?

A. Yes.

Q. And then you had to do a fellowship? You didn't have to do a fellowship. You earned a fellowship and you did a fellowship from 2015 to 2017?

A. Yes.

Q. And, so, you finished your -- you finished your fellowship, what, four years ago, and you finished your residency about six years ago?

A. Yes, approximately.

Q. And then you went to work at Vanderbilt University. Right?

A. Correct.

Q. And that was in 2017 you started work?

A. That was in 2017, yes.

Q. And at Vanderbilt you're both an academic professor and a practicing doctor. Correct?

A. Yes. I see patients and I have appointment as an assistant professor.

03:56:46 **Q.** Assistant professor. So, it's like assistant professor, associate professor, full professor. Correct?

A. Yes. There is sometimes that -- a level instructor as well.

Q. Below the -- below -- And you're assigned -- Well, let me -- You're in the department of neurology?

03:57:04 **A.** Yes.

Q. And there are ten divisions there?

A. I don't know exactly how many divisions there are.

Q. Fair enough. It is amazing what you can learn on the web. Sorry.

03:57:15 But are you assigned to the Behavioral and Cognitive Neurology Division?

A. Yes.

Q. And who is Daniel Claassen?

A. Daniel Claassen is another one of the behavioral and cognitive neurologists in the group.

Q. And is he responsible for the group? Is he your boss?

A. So, he's the division chief.

03:57:38 **Q.** He is like your boss's boss?

A. Well, I don't think of it as bosses, but, yes, he would be the head of our division, and then there is a chairman of the department, and then there's a head of the hospital, and I am sure there are people in between those positions.

Q. And this is not meant with any disrespect, but some things only come with time, but are you one of the more junior M.D.s in your division?

A. Yes. So, I think that in our division I would be one of the more earlier people. Younger people, I should say.

Q. And you -- within the division there are numerous clinics and centers in the Department of Neurology. Correct?

A. Yes.

Q. And you're the Director of the frontotemporal dementia clinic. Right?

A. Correct.

Q. And thank you for putting up with all my mispronunciations this afternoon, so I appreciate it.

What is the frontotemporal dementia clinic?

A. So, I evaluate patients with concerns for a different type of frontotemporal dementias. This is a group of different dementias where patients can present with behavioral problems, problems in their social behavior.

They can also present with language problems. They can present with motor problems that may overlap with some of the symptoms of Parkinson's, so things like PSP and corticobasal degeneration. And then they may also have
03:59:11 atypical forms of other diseases like Alzheimer's, or it may spill into actual cases where it just seems like more typical dementias.

Q. But frontotemporal dementia is definitely distinct from Alzheimer's. Correct?

03:59:25 **A.** In terms of the biology, yes. So, there are different pathologies that are involved in frontotemporal dementia compared with Alzheimer's.

Q. Yeah. I mean, if you look at some of the scans that we've looked at today, they note -- they, like, rule out
03:59:42 frontotemporal dementia in one of the scans. Right?

A. Yes. They commented that they do not feel the patterns are consistent.

Q. Yeah. It looks like it's Alzheimer's or Parkinson's disease dementia but not frontotemporal?

03:59:52 **A.** That is in the reports, yes.

Q. And do you see patients -- by the way -- Scratch that.

We covered Alzheimer's, but frontotemporal dementia is also distinct from Parkinson's disease
04:00:06 dementia. Correct?

A. Yes, they are different diseases.

Q. And do you see patients through the frontotemporal dementia clinic?

A. Do I evaluate? Yes, I see patients as part of that.

04:00:18 **Q.** Yeah. Yeah. It's like that's -- your clinical practice is there. Correct?

A. It is one of the clinics that I have.

Q. And what other clinics do you have?

A. I have general cognitive and behavioral neurology

04:00:29 clinics.

Q. And Mr. Brockman doesn't have frontotemporal dementia, in your opinion. Correct?

A. No, he does not.

Q. Vanderbilt has a Parkinson's disease center. Right?

04:00:41 **A.** They do have a Parkinson's disease center.

Q. And are you assigned to the Parkinson's disease center?

A. No, I am not directly involved in the Parkinson's disease center, although I do have research projects in

04:00:55 patients with Parkinson's disease.

Q. Okay.

A. I evaluate them -- patients with Parkinson's disease as part of that.

Q. All right. In fact, did I use one of your papers

04:01:03 just now on Parkinson's disease dementia?

A. Yes.

Q. And there is -- there is the Memory and Alzheimer's Center, and you have academic responsibilities there?

A. So, I am one of the faculty affiliate members of the 04:01:26 Memory and Alzheimer's Center. So, that's really the research group that is involved in it. So, it's a group of neuropsychologists that are tasked with helping to form a specialized research center in Alzheimer's called an Alzheimer's Disease Research Center.

04:01:41 **Q.** Yeah. So, it's the research side but not the clinical side of it. Correct?

A. Correct.

Q. And, so, if Mr. Brockman was -- walked in with his current diagnoses, to Vanderbilt, you wouldn't be his 04:01:52 doctor. Right?

A. Well, I could be. I could evaluate someone for memory concerns. I could evaluate someone for concerns about dementia with Lewy body, or these different disorders. I have a number of patients with Lewy body 04:02:06 disease. Probably the majority of my patients, even though I specialize in frontotemporal dementia, have Alzheimer's disease.

Q. So, you specialize in frontotemporal. Is it coexisting Alzheimer's, then?

04:02:19 **A.** There are some cases where it can be coexisting, but,

in general, in the patient who has the right clinical features, we think that we can diagnose that and separate that. But it is the case that we may have a patent where we think they have frontotemporal dementia, and they would have a positive amyloid PET scan or amyloid on their spinal fluid.

Q. So, serendipity, if there was a belief that somebody had frontotemporal that was directed to you or referred to you, it turns out that they have amyloid plaque and tangles, they stay with you because you have already sort of worked them up. Is that how it works?

A. There they would. And it's possible that someone would be referred for memory loss to begin with, and I would see them as part of my other clinic.

Q. For just memory loss, but somebody with a diagnosis of Parkinson's and Alzheimer's would likely go to the Parkinson's clinic or the Alzheimer's clinic for treatment?

A. No. So, I mean, I would be one of the primary people seeing them for Alzheimer's dementia.

Q. Okay. How many patients are you treating at present?

A. I don't have a good estimate. At least 500, maybe more than that.

Q. Now, going back to the March scan, March 12th, 2021, scan, Defense Exhibit 39.

The government hired its own neuroradiologist in this case. Correct?

A. Yes.

Q. And that's Dr. Ponisio?

04:04:23 **A.** Dr. Ponisio, yes.

Q. And Dr. Ponisio reviewed the March PET scan and issued a report in September, three months after your original report. Right?

A. Yes. She evaluated the scans, issued a report, and 04:04:39 she also performed the quantitative PET measurements that we looked at. Those provided kind of a more quantitative measure of the areas of the brain that were involved.

Q. Yeah. And those are sort of the computer tools. When you put it up, it gives you some quantitative data 04:04:56 that -- like a -- like the Neuroreader product that spits out on the MRI?

A. So, it's a similar idea to that where it is comparing it to other persons who don't have neurological disorders to get a more quantitative estimate of the areas of the 04:05:15 brain that are affected.

Q. Okay. I'll show Government's Exhibit 6, which is Dr. Ponisio's report.

And Dr. Ponisio's interpretation of the scan differed slightly from the radiologist at Houston 04:05:40 Methodist. Correct?

A. Yes, I think it did.

Q. Yeah. And Dr. Ponisio found that "The visual qualitative analysis demonstrates abnormal moderate to markedly decreased metabolic activity in the" -- what is that? I am not going to pronounce it.

04:06:00

A. The cingulate gyrus and bilateral precuneus.

Q. Thank you. So, those are additional areas of the brain where Dr. Ponisio sees moderate to markedly decreased metabolic activity. Correct?

A. Yes. And those really came out in the quantitative analysis where you could see those areas.

04:06:20

Q. But, for now, with respect to her findings here, this is the visual qualitative analysis that she is describing?

A. She does comment on that in the qualitative analysis, yes.

04:06:34

Q. Yes. And, in addition, she also confirms the mild hypometabolism -- or she finds mild hypometabolism in the right frontoparietal lobes. Correct?

A. Yes. That's what she states here.

Q. And marked decreased FDG avidity in the bilateral caudate nucleus. What's the FDG avidity? Is that the actual -- the tracer?

04:06:50

A. Yes. So, that's just another way of saying that there was less binding, less activity, in that area.

Q. Okay. So, fair to say in interpreting the March

04:07:05

scan, Dr. Ponisio observed additional abnormalities when you compare it to the reading from Houston Methodist?

A. Yes. She comments on more areas of abnormalities.

Q. More areas. And it is also a different degree of abnormality that she observes. Correct?

A. Well, I think there is a difference between the degree of abnormality in that region versus whether that's considered to be a mild finding overall --

Q. Okay.

A. -- or an early finding overall.

Q. Okay. So, you could have a markedly decreased metabolic activity and still have a mild finding?

A. You could have a markedly decreased metabolic activity in a single area but have a mild finding overall if that doesn't extend into other areas.

Q. In this answer --

A. So, the question is usually --

Q. No. I apologize. You complete your answer.

A. No. The question is usually looking at the scan as a whole rather than as individualized.

Q. And in this instance it does go into other areas. She notes issues with multiple areas, multiple regions of the brain. Correct?

A. She does comment on several areas in the report.

Q. And then Dr. Ponisio conducted this quantitative

analysis that, as I understand it from you, takes the image and then compares the image against a control set and then determines if there is a statistically different -- a statistically significant difference in
04:08:57 what is seen from the control set. Correct?

A. Yes. And it gives you a Z-score which essentially corresponds to the number of standard deviations different from that population.

Q. And this comes up in the context of the MRI.
04:09:09 Standard deviation is a very important concept when you're comparing an individual against a group; is that correct?

A. Yes.

Q. Okay. Why?

A. Well, it tells you how far off of that group that
04:09:24 patient is. So, it tells you to what degree they are different than that population they're comparing them to.

Q. Providing the standard deviation is standard in scientific work?

A. Yes. It's not always a Z-score. And often it's used
04:09:43 for later statistical analysis that may end up at a -- you know, a statistical significance in a different way. But, yes, we would in almost all those situations look at something like a standard deviation to see is this group different than the group we're comparing it to?

Q. Yeah. And that's groups. Is it -- it's even more
04:09:59

important, if you're comparing an individual -- a single individual to a group of individuals, to be -- for that comparison to be valid, you would need to know the standard deviation. Correct?

04:10:18 **A.** You would want to. Yes.

Q. And why would you want to?

A. And, so, that tells -- I mean, that tells you how different they are from that population average.

Q. I mean, if you -- to be scientifically valid you

04:10:30 would need -- and to vet the -- the -- the scientific value of the data, you would need to know the standard deviation. Correct?

A. Well, you really wouldn't do an individual versus a group as a scientific study.

04:10:43 **Q.** So, if you're comparing an individual against a group, that's not really a scientific study?

A. So, it -- I mean, typically, you are looking at group studies that are reported in the literature.

MR. LOONAM: I hear banging on the -- on the

04:10:55 benches, Your Honor. I don't know what that was. But I heard banging on the benches, and I don't know if that's a signal from somebody in the audience.

UNIDENTIFIED SPEAKER: I was shifting my weight and the bench moved.

04:11:09 MR. LOONAM: Are you a witness in this case,

sir?

UNIDENTIFIED SPEAKER: No.

THE COURT: I don't --

MR. LOONAM: There is nothing to do, Your Honor. I heard -- we were giving an answer and I heard banging all of a sudden on the bench, and since we have witnesses in the courtroom, I just wanted to make sure that there was no signaling going on.

THE COURT: I don't think that there was based on his answer, but if you think that there is some signaling going on, let me know.

MR. LOONAM: Let me be clear. Nothing to impugn the witness. That's absolutely not --

THE COURT: Okay.

MR. LOONAM: That is not what I intended.

THE COURT: Okay. I just want to make sure. I mean, if you have a concern, let me know.

MR. LOONAM: No. No. No.

THE COURT: I didn't hear it, actually.

MR. LOONAM: Yeah.

BY MR. LOONAM:

Q. Okay. So, you were saying for a scientifically valid exercise, you wouldn't really compare an individual against a group?

A. So, this is being done -- Clinically, you would

compare the group -- I guess I am not really understanding your question.

Q. Well, you had -- I had asked you if you would want to know the standard deviation, if you were comparing an individual against a group, like we're doing in the Neuroreader exercises or in the MRI exercises, where you have an individual scan for an individual brain and you were comparing that against a group. Correct?

A. Correct.

Q. And I said, when you do that exercise, when you compare an individual against a group, you -- you -- to do a valid comparison as a scientist, as a doctor, you need to know the standard deviation. Correct?

A. Yes. The standard deviations correspond to, you know, the percentiles of where that patient would fall.

Q. Is two standard deviations typically captured on 95 percent of the group population?

A. Yes. So, that would be about two and a half percent on either side.

Q. Yeah. So, if you're -- if -- to be statistically significant, if you are -- have two standard deviations, statistical significance means you're on sort of -- if there is a bell curve, you are on two-and-a-half percent on either side of the bell curve. Correct?

A. So, that's what this is referring to, yes.

Q. And, so, here, after running the -- the quantitative analysis, Dr. Ponisio determined that there was a statistically significant decreased tracer accumulation in Mr. Brockman's caudate nuclei, interior cingulate, posterior cingulate and precuneus. Correct?

A. Yes. That's what it states here. And those were the images we were looking at earlier.

Q. The images we were looking at earlier, but -- Okay.

And according to Dr. Ponisio this described pattern of hypometabolism can represent early Alzheimer's dementia in the correct clinical setting?

A. Yes. That's what he says.

Q. And, you know, here, you were asked questions about Dr. Ponisio's use of early Alzheimer's dementia on direct. Do you recall that?

A. Yes. I remember I was asked about that.

Q. And do you have any reason to doubt Dr. Ponisio's competence?

A. No. No.

Q. Do you have any reason to doubt that Dr. Ponisio intended to indicate early Alzheimer's dementia on this -- on this paper?

A. I don't know what she intended, but that's definitely what it says.

Q. Yeah. Thank you.

So, you -- we talked about the amyloid PET scan. You talked -- you discussed it in direct. Correct?

A. Yes.

Q. And Mr. Brockman underwent the amyloid study on -- on July 28th, 2021. Correct?

A. It was in July. I don't remember the exact date.

Q. Fair enough.

A. But I think that sounds right.

Q. And your memory has been good, so -- And you didn't request this scan, right?

A. No, I did not.

Q. And on direct there were questions suggesting that there may not be much value in obtaining the amyloid scan. Do you remember that?

A. I don't remember that question exactly.

Q. Okay. So, you think there is -- there is value in obtaining the amyloid scan. Correct?

A. Well, I think the amyloid scan tells you whether someone has amyloid. And, so, that would, again, correspond to the likelihood that cognitive symptoms would be related to Alzheimer's disease, but it wouldn't be useful in telling you the degree of expected cognitive impairment.

Q. Well, it's a gating issue, but once you have -- Well, first of all, you don't know when Mr. Brockman started

accumulating the beta amyloids in his brain. Correct?

A. No, we don't.

Q. It could have been --

A. At one time point from July.

04:17:04 **Q.** Yeah. It could have been a decade before. Correct?

A. Yes, it could have been.

Q. And -- but, in this case, the results of the -- the PET amyloid had a -- an impact. Correct?

A. It has an impact on the possible diagnoses that he

04:17:30 may have leading to cognitive impairment. It does not have an impact on the amount of brain damage that were on the other scans. So, it doesn't really change the interpretation of those.

Q. Because that -- you have -- actually, that goes to

04:17:44 the tangles, right? You call it the Tau tangles?

A. Well, the Tau tangles happen next, and then there are the changes that happen on the FDG PETs and the MRI scan.

Q. Well, the changes that occur on the -- on the FDG PET -- Is there a correlation between the Tau tangles

04:18:06 interfering with the activity of the neurons that is causing the hypometabolism?

A. So -- Yes. So, the changes on the MRI scan and the FDG PET correspond more closely to the Tau and can correspond to that accumulation.

04:18:22 **Q.** So, you were asked questions on direct about, you

know, there was no Tau scan in this case. Do you remember that question?

A. Yes.

Q. All right. And you said that there was no Tau in this case, which there wasn't. You could have ordered a Tau scan. Right?

A. Yes. I could have ordered or recommended a number of different tests.

Q. You recommended a bunch of tests -- EEG, a couple FDGs. Mr. Brockman went through all of it. Correct?

A. Yes.

Q. And, so, had you wanted a Tau test, you would have had it. You have every reason to believe that you would have gotten the results. Correct?

A. Well, I don't know if I would have gotten the results, but, if I had recommended it, it would have been communicated, yes.

Q. All right. Well, if past is prologue, I guess.

And, so -- but the Tau test, in light of the FDG PET and the hypometabolism, is unnecessary in this context. In the research context, it may be different; but in this context, it's unnecessary. Correct?

A. Yes. I think the -- you know, the more important imaging is the MRI and the FDG PET because that is what is going to correspond most closely to the clinical symptoms.

And whether that is due to Alzheimer's disease, Parkinson's disease or a combination -- for the current determination, I don't think that that is useful or is necessary to make that determination.

04:19:49 **Q.** Okay. And in addition to -- Let me pull it out here. Back from the 28th. Government's Exhibit 7. That's not the PET. That's Ponisio. Sorry.

So, this is Government's Exhibit -- Defense Exhibit DX-42. So, we talked about the impression

04:20:56 is positive study indicating moderate to frequent amyloid neuritic plaques. In the findings it indicates: "There is diffuse loss of the gray-white matter distinction, most pronounced in the frontal and temporal lobes."

So, is -- that finding, that's the

04:21:15 consistent observation for a positive amyloid plaque study?

A. Yes. So, this indicates a positive amyloid plaque study.

Q. Dr. Ponisio reviewed this study and issued a report.

04:21:47 Did you review that report?

A. Yes.

Q. Dr. Ponisio found an abnormal decreased cortical white matter contrast throughout Mr. Brockman's cerebrum. Is that another way of saying, sort of, the results for a

04:22:00 positive PET amyloid?

A. Yes. She essentially agreed it was a positive amyloid PET study.

Q. Yes. All right. So, there was an August 24th, 2021, FDG PET scan?

04:22:15 **A.** Yes, there was.

Q. And you -- you ordered that PET scan? There is somebody else's name on the scan, right, but you ordered that scan?

A. It was my suggestion, yes.

04:22:23 **Q.** Yes. And you have read the report from the August 24th scan?

A. Yes.

Q. And, again, this is Defense Exhibit 45, the same Mr. Fisher. And this study found, you know, again, the

04:22:59 findings are mild. Let me see here. "The findings are mild but very suggestive of a neurodegenerative disease, particularly Alzheimer's disease, although statistically less likely. Dementia with Lewy bodies or Parkinson's disease with dementia can have a similar scan pattern.

04:23:21 The markedly abnormal uptake on the prior amyloid PET scan also somewhat favors Alzheimer's disease over dementia with Lewy bodies or Parkinson's disease dementia."

And you agree with that finding?

A. Yes. I largely agree with this interpretation.

04:23:45 **Q.** And the -- this scan -- Well, let me ask this. As a

doctor and in dealing with so many patients, you have to -- you order scans for your patients, right?

A. Yes.

Q. And you have to deal with insurance companies and paying for scans. Correct?

A. In some instances. Sometimes insurance companies will cover it. Other times we may have to discuss that with them.

Q. As a typical practice, are you aware of whether or not an insurance company will cover two FDG PETs of a brain in a single year?

A. I am not aware.

Q. But you haven't heard that they typically will not cover two FDG PETs in a single year because they do not expect to see changes in that amount of time?

A. I typically wait for a year to have more sensitivity, but I don't recall ever being told that I couldn't order a test before that.

Q. But you, yourself, in your clinical practice would typically wait at least a year before ordering another FDG PET. Correct?

A. Yes. So, if I was trying to estimate the normal progression of one of these disorders, you know, again, I would not expect there to be significant changes in the PET scan, you know, according to that normal disease

course.

Q. And in Mr. Brockman's case there was progression -- observable progression in his hypometabolism from March to August. Correct?

04:25:16 **A.** Yes. So, that's the amount of progression that I would expect based on a normal disease course.

Q. What you are saying here is that that's the normal amount of progression you would expect?

A. Yes. Comparing the two scans -- the one from March, 04:25:28 the one from August -- looking at those images on a quantitative analysis, that's what I would expect.

Q. Okay. So, over a five-month period?

A. Over a five-month period.

Q. Do you have a neuroradiologist that you use as part 04:26:01 of your clinical practice?

A. There is not a specific neuroradiologist.

Q. Is there a team of neuroradiologists?

A. I believe it's a department in the hospital.

Q. And they send you the reports after -- after reading 04:26:09 the PETs?

A. Yes. Typically, the orders will be made and then there is a report generated from the PET.

Q. The MRI -- just generally, the MRI is -- is a -- I think you used "less sensitive instrument" than FDG PET. 04:26:36 Correct?

A. Yes.

Q. And -- but, before, I think you had testified that, you know, MRI was kind of a lagging indicator, that you would see changes on the FDG PET first and then you would 04:26:48 see it on the MRI? Do I understand that correctly?

A. Well, I think that you could see them at the same time, but, in general, I would -- would think that the PET scan is more likely to detect an abnormality that's reported than the MRI scan.

04:27:04 **Q.** But to be clear -- and I think we already covered this -- you could see hypometabolism and abnormality on the FDG PET that does not result in atrophy. Correct?

A. Yes. You could see hypometabolism on the PET that would not be corresponding to atrophy on the brain MRIs.

04:27:26 **Q.** So, rather than the neurons dying, they are just being disrupted in some way where they are not -- they are acting abnormally. Correct?

A. Well, that's one reason. They also could be dying but to a small enough degree that that is not detectable 04:27:41 on the MRI.

Q. So, in addition, there could be offsetting inflammation of the brain. Correct?

A. I'm not sure I quite follow you.

Q. Well, like -- neurons can be dying, but they can be 04:28:00 offsetting inflammation in the brain so that the

volumetric analysis that the MRI's conducting does not detect volumetric change?

A. So -- I mean, I am not sure exactly what you're referring to.

04:28:13 Typically, when we think of acute inflammation -- so things like multiple sclerosis, infection -- that can cause swelling in the brain, in neurodegenerative disorders there is some hypothesis that there could be an inflammatory component, but it is not

04:28:29 that acute inflammation that we see in those other disorders.

Q. Yeah. So, you can't compare it to multiple sclerosis, then?

A. Correct.

04:28:38 **Q.** Okay.

THE COURT: And, counsel, just for planning purposes, I plan on going to about 5:30.

MR. LOONAM: Yes, Your Honor.

THE COURT: We have got plenty of time.

04:28:51 MR. LOONAM: That's great. I am wrapping -- I am seeing what I need to cover. And I am going to get to, I think, the findings point that I previewed at the very beginning.

THE COURT: Okay.

04:29:02 MR. LOONAM: But we will try and -- I think my

suggestion will be to use a scalpel.

THE COURT: Well, I just wanted to tell you you have got another hour, so don't worry.

MR. LOONAM: Thank you, sir. It's a dangerous thing to tell a lawyer.

04:29:14

(Laughter.)

BY MR. LOONAM:

Q. You know, you have, you know, your clinical practice. Do you think having a clinical practice is important to be able to conduct an evaluation of a patient like Mr. Brockman?

04:29:31

A. Do I think that seeing patients clinically is helpful for giving a forensic evaluation?

Q. Yes.

A. Yes.

04:29:44

Q. One moment. Can we go to your supplemental report? Do you have that in front of you? No, you probably don't have that.

A. No, I don't.

MR. LOONAM: It's the government version.

04:30:33

MR. MAGNANI: Yeah, we have it, I think.

THE WITNESS: Thank you.

MR. LOONAM: Sure. Let me find my spot. I'm sorry. One moment, Your Honor.

THE COURT: Oh, sure. Take your time.

04:32:02

MR. LOONAM: Yeah. I apologize.

BY MR. LOONAM:

Q. Page 9 of Government's Exhibit 39. Okay. I am going to focus on the paragraph beginning "Given his age..." Are you there?

A. (No response.)

Q. Are you there?

A. Oh, I'm sorry. Page 9?

Q. Page 9.

A. Yes.

Q. The paragraph that begins "Given his age..."

A. "Given his age..." Yes.

Q. Okay. So, "Given his age, recent hospitalizations for delirium, the expected disease progression, and neuroimaging results, it is possible that Mr. Brockman is now in the dementia stage. However, it is unlikely that Mr. Brockman would be at the severe or end-stage dementia as his most recent evaluations would suggest."

That sentence, in and of itself, does not rule out moderate dementia, does it?

A. That sentence does not comment on moderate dementia.

Q. That's right.

You talk about the -- in this paragraph, you talk about the possibility that Mr. Brockman is now in the dementia stage, but you -- you go beyond that

possibility and you opine, in the bolded paragraph beginning in the second line -- the second sentence: "It is reasonable, given his hospitalizations for delirium, natural disease course, and neuroimaging, that Mr. Brockman has progressed to the dementia stage, but it is unlikely that he would be at the severe or end stage of dementia as indicated by his recent assessments."

There is nothing in that sentence that rules out moderate dementia. Correct?

04:34:38 **A.** It does not comment on moderate dementia.

Q. Yeah. Your report finds it unlikely that Mr. Brockman is at severe or end-stage dementia, but, you know, can you direct me where in your report that you rule out that Mr. Brockman has progressed to moderate dementia?

04:35:10 **A.** In this section, I don't see that I use the word "moderate."

Q. No. The whole report. Anywhere in the supplemental report, sir? Take your time.

A. I am -- again, I am not aware of using that word. I could look through the report, but I don't recall using "moderate dementia."

Q. Yeah. So -- so, what you -- in your report that was provided to defense, you -- you ruled out severe dementia and end-stage dementia, which is like at death's door. Correct? You talk about the -- the reasonableness or the

plausibility of early dementia, but you're silent with respect to moderate dementia. You certainly don't rule it out. Correct?

A. I don't use the word "moderate" dementia in this report. And this is referring, really, to the natural disease progression from MCI to the mild dementia stage.

MR. LOONAM: Your Honor, I mean, so the witness has opined today on direct in a way not disclosed in his report. We have now confirmed it. I don't know what the government had in mind when it said it could point to the -- the line where Dr. Darby ruled out moderate dementia, but moderate dementia was not ruled out in this record as disclosed to the defense.

THE COURT: Okay. Response?

MR. MAGNANI: I think the -- and I don't have the report in front of me, but my understanding is the witness's opinion is that the defendant has MCI, or mild cognitive impairment, up to the potential of possible early dementia. I don't think the absence of him saying in his report he does not have moderate dementia -- In other words, the rest follows. If the witness's report says he has MCI up to mild dementia, that necessarily means he does not have beyond mild dementia.

So, this is just another word game that defense counsel has been playing with this witness for

hours.

MR. LOONAM: Judge, this is not a word game.

THE COURT: Let me just ask the witness.

MR. LOONAM: Yes.

04:37:18 THE COURT: Have you ever reached that opinion before?

THE WITNESS: Which specific opinion?

THE COURT: The opinion with respect to you can't rule out mild --

04:37:32 THE WITNESS: Dementia.

THE COURT: -- dementia.

THE WITNESS: Yeah. So, this is really based on that progression. So, we know, you know, as a rough estimate, 15 percent of patients with MCI may progress to

04:37:43 the mild dementia stage. That may be increased with the presence of a delirium episode. So, without what I felt was accurate information regarding the actual level of functional impairment he had, what we had to go on was the expected disease course, and so I think there is that

04:38:02 percentage there that you could see that would progress.

So, I just don't know, based on the information, what his exact level of impairment would be.

THE COURT: But don't you want -- I mean, that's what I'm trying to figure out.

04:38:15 MR. LOONAM: That's a different answer than

what he gave on direct, Your Honor, and we can read the exact quotes here, which are different than what the government just said. The witness said -- and it's not only in one spot. It's repeated here, and I'll go to the ending.

04:38:28

'It is unlikely that he would be at the severe or end stage of dementia. It's reasonable that he's progressed to mild dementia' and is just silent with respect to moderate dementia.

04:38:42

The witness has now said, 'I don't know.' That is not what he said on direct.

And if we go through the report, in multiple places you'll see that what the witness said was in the report. And, look, I don't want to make too much of

04:38:59

this because -- but in this report he -- he says this. Let's go through the conclusions.

THE COURT: Okay. Well, let me just stop you there.

Okay. Let's say he is not allowed to

04:39:10

provide that testimony. Where does that get you? So, let's say that I prevent him from saying that he can't rule out mild to severe dementia. Where does that get you?

MR. LOONAM: I want to strike that he rules out the possibility of moderate dementia.

04:39:26

THE COURT: Okay. And how does that help you?

MR. LOONAM: Because it leaves open the possibility, especially given his last statement -- His last statement was 'Because of the natural progression, because of his' -- 'I can't' -- 'I can't tell where he is, 04:39:39 which is' -- 'other than severe or end stage.'

He is very clear. 'I look at the scans. I look at where he is on this. It is clear to me that it is not end-stage or severe dementia.' That opinion is clear and it was disclosed to us.

04:39:52 He thinks it's reasonable that it's progressed to -- to mild dementia, but it leaves open the possibility that it could be moderate dementia.

THE COURT: And, so, how does that -- I am still trying -- I just want to make sure I understand this.

04:40:07 So, you strike that. How does that help you? So, you strike the fact that --

MR. LOONAM: This witness has not ruled out the possibility that Mr. Brockman is suffering from moderate dementia.

04:40:19 THE COURT: Maybe I am missing something.

Isn't that what you're saying? You don't know based on the information you have?

THE WITNESS: I think there is that uncertainty.

04:40:29 So, what I would expect from a patient who

is at the mild cognitive impairment stage in May of 2021 is that could be progression to the stage of mild dementia. I don't think it is likely it would progress beyond that based on the natural course of the disease. I don't think it would progress beyond the mild dementia stage.

04:40:45

THE COURT: Okay. I want to take a look at the previous testimony. I'll be right back. Just pull it up. Give me maybe about five minutes, counsel.

MR. LOONAM: Thank you, Your Honor.

04:40:58 (Proceedings recessed from 4:40 to 4:45.)

THE COURT: Please be seated, everyone.

Okay. I reviewed the transcript and I also reviewed the expert report. Respectfully, objection overruled.

04:45:51

He testified that it is up to mild and definitely not severe, but he can't say one way or the other whether it's moderate. That testimony is consistent with his testimony on the stand today, and it's consistent with his expert report.

04:46:05

Respectfully, disagree.

MR. LOONAM: Your Honor, I just want to make sure we're clear on the record. Going back to his direct -- Okay.

THE COURT: I am going back to -- I am looking at his direct testimony. I am also looking at the expert

04:46:16

report. I am also looking at his testimony on cross-examination.

And I understand that you guys don't agree with this, but to me it's very clear. The witness is saying it's up to mild. It's definitely not severe. And the only implication is, is that it could possibly be moderate, but this witness is saying that he is not clear on that. It is likely, but it's not clear.

MR. LOONAM: Your Honor --

THE COURT: Is that --

THE WITNESS: Well, I would say that I think it's -- that he is in the mild cognitive impairment to the mild dementia range. I do think that it's unlikely that he is at the moderate dementia range.

THE COURT: And that is not inconsistent from what -- respectfully, from what he testified earlier, and it's not inconsistent with his report.

MR. LOONAM: Okay. Your Honor, let's -- I --

THE COURT: And you can preserve the issue on appeal --

MR. LOONAM: Yes, Your Honor.

THE COURT: -- but I am overruling the objection.

MR. LOONAM: Understood.

BY MR. LOONAM:

Q. Turn to Page 11 of your expert report. It says: "Based on the expected natural disease course, neuroimaging findings, and hospitalizations for delirium, it is plausible that Mr. Brockman would have progressed from the MCI to dementia stage. However, I do not think it is likely that he would be at the severe or end stages of dementia."

That finding does not exclude moderate dementia. Correct?

04:47:34 04:47:48

A. So, I don't state the word "moderate" in that statement.

Q. The -- you found that the progression of cognitive impairment between 2011 -- or 2021 and Two Thousand -- I'm sorry. Reset.

04:48:05

You, in finding -- Paragraph 5, you state: "I do not believe that his current assessments accurately reflect his true level of cognitive impairment and am, therefore, unable to determine whether his cognitive impairment is severe enough to make him incompetent to assist his defense."

04:48:30

And, so, in Paragraph 5, you credit the -- the government's position that Mr. Brockman is malingering. Correct?

A. Yes. I think that he is exaggerating the severity of the symptoms.

04:48:51

Q. And you are aware and you have watched all of the -- the deposition videos listed in your report. Correct?

A. Yes.

Q. And did you speak -- prior to your testimony today, are you aware that Dr. Denney conducted a neuropsychological testing and he believes that Mr. Brockman is malingering?

A. Yes, I have read Dr. Denney's report.

Q. And have you spoken with -- well, did you learn of Dr. Denney's -- Strike that.

But -- but, in any event, even though you credit malingering, there's insufficient affirmative evidence for you to determine whether or not Bob is competent to proceed, to assist his defense. Correct?

MR. MAGNANI: Objection. Again, it is beyond the scope of his expertise. He is asking about competence, and I think this witness made clear he is a medical doctor. Competence is not what he is prepared -- it's not what he has testified about.

MR. LOONAM: It is in his report. It's right here, Your Honor.

THE COURT: Okay. One second.

He doesn't offer an opinion about competency. He says, "I am unable to determine..." So, you can't turn it on him and say that he is qualified to

testify about incompetency. He says, "I am unable to determine..." "I am not offering an opinion."

So, I am not letting -- I am not letting him talk about competency, respectfully. Objection

04:50:33 overruled.

MR. LOONAM: Your Honor --

THE COURT: I am not going to let him do it, Counsel. So, you have got the issue on appeal. You have made the objection. I have overruled the objection. Let's

04:50:42 move on.

He is saying he is unable to determine and make a call on competency. He is not doing it. If he had issued an opinion on competency, I'd say fair game; you are allowed to cross-examine him on it. But he hasn't. Since

04:50:56 he hasn't, we are not going there.

BY MR. LOONAM:

Q. Did you issue an opinion on competency in your original report, Dr. Darby?

A. I don't know if I used the word "competency" in my

04:51:06 original report.

MR. LOONAM: Pull it up.

A. I don't remember.

BY MR. LOONAM:

Q. In Paragraph --

04:51:09 **A.** I did say that I felt like the types of things he was

demonstrating to me during our interview, such as pointing me towards information, pieces of evidence, and the way he was describing them were the things I thought would be necessary to assist in his defense.

04:51:26 **Q.** To assist in his defense?

THE COURT: And that's fair game. I mean, as I said earlier, he can testify about what he can do and what he can't do, but making testimony -- offering testimony about competency and incompetency, that's for the Court to

04:51:39 determine based on the facts of what he can and can't do.

So, you can testify -- can he answer questions from counsel? Yes or no. Can he remember dates and places and names in order to assist counsel in defending him? Yes or no. But he can't testify,

04:51:57 respectfully, as to the issue of competency. That's for the Court to decide.

So, you can ask him specific questions like you were doing earlier about what he -- what he believes Mr. Brockman can or can't do, but as far as the

04:52:11 general question as to whether or not he is competent to assist in his defense, that's for the Court to determine.

So, I am not stopping you from asking him the individual questions.

MR. LOONAM: No. I understand, Your Honor.

04:52:25 It's just, as I read 5, he explains the reason he is unable

to make the determination, is because he believes Mr. Brockman is malingering. Correct? So, that's what I was exploring.

THE COURT: Right. But he doesn't -- but he
04:52:38 doesn't reach the opinion as to competency or not competency -- whether he is competent or incompetent; and, if he did, I would have some issues with that as a lay witness, untrained in legal issues. So, respectfully, we are not going there.

04:52:56 MR. LOONAM: Okay, Your Honor.

BY MR. LOONAM:

Q. In -- in your report you state that Mr. Brockman is at increased risk for progression over time. Correct?

A. Yes. I did state that.

04:53:21 **Q.** And that's increased risk versus other Alzheimer's patients. Correct?

A. Correct. So, by having an episode of delirium, that is associated with an increased risk of progression over time.

04:53:38 **Q.** And as we discussed earlier, Mr. Brockman has had three episodes of delirium over a relatively short period of time. Correct?

A. Yes. He has had hospitalizations for delirium in March, June and September.

04:53:52 **Q.** And the -- the repeated episodes of delirium would --

would -- that factors into the level of increased risk for progression over time. Correct?

A. The fact that he has had delirium before is a risk factor for that increased progression over time.

04:54:13 **Q.** And, again, not just the one incident but the repeated incidents of delirium increase the risk of increased progression. Correct?

A. Again, I don't know if the multiple episodes increases that risk.

04:54:38 **Q.** And you note that Mr. Brockman is at risk for future episodes of urinary infections. Correct?

A. Yes. He's had three over a short period of time and -- yes.

Q. And this -- this report was about Mr. Brockman's

04:55:01 competency. Correct?

A. The report was to provide medical opinions that would help in that determination.

Q. And, so, why did you include the information about his increased risk for future episodes of urinary

04:55:18 infections?

A. That's a good question. I'm not sure if that's actually relevant to that or not.

Q. You don't recall why you put it in there?

A. I -- I believe that it's true.

04:55:29 **Q.** Yeah. You believe he is at risk of additional

urinary tract -- urinary infections. And would it be the case, given his track record, that that would be associated and likely lead, given his vulnerability -- demonstrated vulnerability, to additional bouts of delirium in the future?

04:55:46

A. I think the fact that he has had urine infections before with delirium, yes, would increase that risk, that if he had a urinary infection in the future, he could become delirious.

04:55:57 **Q.** And --

MR. LOONAM: Anything else?

Nothing further, Your Honor.

THE COURT: Okay. Redirect? At your convenience, counsel.

04:56:14 MR. MAGNANI: Your Honor, I will just give Mr. Loonam some time.

But, Your Honor, I would just like to inquire of you before I begin about whether the cross-examination, which I interpret to have been

04:56:26 impeaching the witness for what's not in the report to suggest that the opinion was unreliable -- whether or not -- You mentioned, if he had opened the door on cross, that on redirect it may be appropriate to show the other sources that this witness did not put in his report but

04:56:45 that he did consider in forming an opinion and making that

slide.

THE COURT: Right. I don't think he is -- I don't think that he opened the door.

MR. MAGNANI: Okay.

04:56:53 THE COURT: I mean, because if he had said that -- if he pulled up the exhibit and then said, 'Looking at this, why is this consistent' -- or, you know, 'This isn't consistent with what other doctors have seen or that sort of thing, then he would have opened the door. I think

04:57:08 Mr. Loonam very carefully avoided going there to keep from opening the door on that issue.

So, respectfully, I don't agree.

MR. MAGNANI: And --

THE COURT: So, you have 30 minutes.

04:57:19 MR. MAGNANI: And, Your Honor, just to sustain your own 403 objection, anytime if this is not helpful, I just want to clarify some language and things like that.

REDIRECT EXAMINATION

BY MR. MAGNANI:

04:57:29 **Q.** Okay. Dr. Darby, have you ever thought about words as much as you have in the last couple of hours?

A. No, probably not.

Q. Are you more of a science guy or a word guy?

A. I'm more of a --

04:57:39 MR. LOONAM: Objection.

A. -- clinician and scientific researcher.

BY MR. MAGNANI:

Q. Okay. And we talked about things that are possible. Is it fair to say that anything is possible?

A. Yes. I mean, I think I would consider a large range of possibilities when I am evaluating a clinical patient or a research question.

Q. Is it possible that Mr. Brockman does, in fact, have late-stage dementia? Is that possible?

A. Yes. I mean, I think anything would be possible.

Q. And is it possible that someone with that much neurodegeneration in their brain could be cognitively normal but just faking it?

A. Yes. So, that degree of impairment on the PET scan could be seen in someone in a normal stage that is able to compensate for that.

Q. So, putting aside what's possible, I just want to ask you what in your expert opinion is likely. And what I want to ask you is what is the most likely diagnosis, not about the disease, not Alzheimer's or dementia, but about the level of cognitive apairment -- impairment? Excuse me.

A. So, I think the most likely diagnosis is that he is at the stage of mild cognitive impairment. So, that is

based on the severity of the FDG PET scan and the fact that I evaluated him in May of 2021 and felt that he was at that stage. And there is a progression that can happen over that period of time; that, again, you know, about 15 percent of people will progress to the mild dementia stage in about a year, and that would be increased with an episode of delirium. But I think that, you know, if you are looking at the percentages knowing only that, that would be my best estimate.

04:58:56

04:59:10

Q. And putting aside the Baylor doctors that we talked about, what did Mr. Brockman's non-Baylor doctor, who was treating his Parkinson's, diagnose Mr. Brockman as of February 2021?

A. He was given a diagnosis of Parkinson's with mild cognitive impairment.

04:59:26

Q. Now, you talk about in your report that it is -- I mean, anything is possible. But you talk about that it is reasonable that he would have progressed to the mild dementia stage.

04:59:37

And my question is: We have talked about a lot of different terminology, and is it fair to say that some of the terminology is used inconsistent by different people in your profession?

A. Yes. There are many different ways to measure and categorize these types of problems.

04:59:52

Q. But is there a clear understanding of the demarcation, the definitional demarcation, between MCI and dementia?

A. So, yes. It's related to the loss of functional independence related to the cognitive problems. So, if the person can no longer do those things independently because of the cognitive issues they are having, then that is what we would call dementia.

Q. So, is it fair to say that while the different ways we describe mild, moderate, severe or end-stage dementia -- those are more subjective, but that the one thing they all have in common is that dementia is where your cognitive problems start to impact your ability to function independently?

MR. LOONAM: Objection to leading.

THE COURT: Okay. Objection sustained. Please rephrase.

BY MR. MAGNANI:

Q. So, how much -- how much consistency is there in your profession about how people describe from mild to end-stage dementia?

A. So, I think that there is -- you know, these are diseases that progress along the gradual course. And, so, the demarcations we have, you know, are based on these different definitions, you know, and so they can be

applied, you know, in different ways, in different contexts.

Q. And so -- but is there definitional certainty about where -- I think you already answered the question.

05:01:14 So, when you say he may have crossed into the dementia threshold, what are you -- what do you mean?

A. Well, I think that it -- he -- you know, if you were to just look at the FDG PET scan -- so, that is something that you could see in someone with mild dementia. If you

05:01:30 were to take into account that he had a mild cognitive impairment, that he is 80, and that he had an episode of delirium in the hospital -- somebody with that situation could progress into the mild stage of dementia.

Q. And, so, what are the types of things that you would

05:01:45 see in a person who just crossed over into the -- just past the dementia threshold but is mild? What would you see in someone like that?

A. So, again, that would be difficulties with complex decisionmaking tasks; so, financial decisionmaking,

05:02:01 needing more assistance with those types of things, not being able to work in a job, and having more difficulty in organizing one's thoughts.

Q. And then just a few more just potentially confusing terminology.

05:02:11 What is the "CDR"?

A. The "CDR" is the clinical dementia rating scale.

Q. And is that -- is that the thing that defense counsel was showing you on the document camera?

A. Well, I think that was a table referring to some of the categories, but I believe the CDR -- I mean, it's essentially a standardized interview and assessment with the patient. So, you interview the patient's family member to get a sense of the problems that they are having from that. You ask them some questions about recent events. And then there is a portion where you go through and administer a small number of tests, but also interview the patient themselves, and arrive at a metric for those different categories about how severe you think the impairment is in each of those six categories.

Q. So, that's pretty confusing, but the terms on the top, from mild to severe, do those correlate with what you have been describing as mild dementia or severe dementia?

A. So, many of the -- I am not sure I totally understand your question.

Q. Is there a one-to-one correlation -- Do you remember the exhibit I am talking about? Unfortunately, I think there is only one copy floating around.

A. Yes, I do.

Q. So, do you remember that it had descriptors on the top that -- you know, from mild to severe?

A. To severe. Yes.
Q. Okay. And what I am asking is: Is being in one of those columns a one-to-one correlation with being mild dementia or severe dementia?
05:03:41 **A.** No. So, I believe there is an algorithm that goes through and takes those numbers, and there's certain decision points, and arrives at an overall summary number that is either zero being normal, 0.5 being mild cognitive impairment; 1, 2 and 3 being mild, moderate and severe.
05:04:02 And, so, you know, being at that number in one category doesn't necessarily mean that you are at that category for that overall rating, but I don't know the specifics of how they take those numbers and determine the overall level.
Q. And, so, when tools like this are developed in your
05:04:17 profession, are they developed with the assumption that the presentation is a genuine one?
A. Yes. So, it's based on the interview with the study partner and with the patient themselves as well as a small amount of testing.
05:04:32 **Q.** So, does that account for the potential of malingering or exaggeration, as you use the term?
A. Well, it -- no. So, it will be based on what the patient and their family are reporting.
Q. Now, another just -- another thing that may create
05:04:49 some confusion -- I think we talked about this a little

bit on direct -- but Alzheimer's disease versus Alzheimer's dementia. And I just wanted to know, because I think on cross-examination, I think you might have said that from Alzheimer's -- from the diagnosis of Alzheimer's
05:05:07 disease could be five to ten years, but I thought on direct you said from Alzheimer's dementia it could be five to ten years until death, and I was just hoping to clarify.

A. Yes. So, the five to ten years is a rough estimate
05:05:20 of the time from dementia to death, and that's, you know, a general ballpark figure for many types of dementias.

Q. So, just putting all this terminology aside, if you accept at face value all of the presented symptoms of Mr. Brockman, where would you diagnose him?

05:05:41 **A.** So, he would be at the moderate to severe stage. And, so, he is needing assistance, essentially, for every -- everything right now, from what the reports are that I have read. And, so, he's needing assistance with his grooming, with his self-care, with using the restroom,
05:05:57 having difficulty remembering where he is and recognizing his home. So, those would be things that you would see at the moderate or severe stage.

Q. And you said that is possible; he could be at that stage?

05:06:07 **A.** Yes. I mean, those things, if accurate, would make

him at that stage.

Q. But why don't you think that he is?

A. Well, I think that it doesn't match the severity of his brain imaging; and, so, again, it is not a one-to-one correspondence. But without other things that I think are reliable to make that estimate on, based just on the imaging, I would say it's at the MCI or potentially the mild dementia stage. Based just on the progression from his initial evaluation in May, I would think it is at the MCI or just dementia stage.

Q. And there was a lot of cross-examination about heterogenous and neurons and glial and things that maybe not everyone in this courtroom understands, but, as you think about everything that you were confronted with on cross-examination, is there anything that makes you second-guess your opinion?

A. No. I still think that he -- that I don't have an accurate assessment of his level of true cognitive functioning, but, based on that disease course and based on the imaging, that he would be at the mild cognitive impairment or the mild dementia stage. That would be my best estimate based on that evidence.

MR. MAGNANI: Thank you, Doctor. I have no further questions.

THE COURT: Recross?

MR. LOONAM: Very, very brief.

THE COURT: Sure.

REDCROSS-EXAMINATION

BY MR. LOONAM:

05:07:23 **Q.** You were asked about the diagnosis from Dr. Lai on recross.

A. Yes.

Q. Are you aware of Dr. Lai's diagnosis of the Defendant in October of this year?

05:07:33 **A.** Yes. So, Dr. Lai evaluated the patient again in October of this year and, based on the reports of his functional status, diagnosed him with a level of dementia.

Q. And the reports on his functional status, I take -- Did you try and reach out to Tommy Barras or other

05:07:54 collateral witnesses to gain insight into the Defendant's current level of impairment since you don't have these videos available?

A. No, I did not contact him; Tommy Barras.

Q. Did you try and contact anyone else who would be able

05:08:10 to observe the defendant on a day-to-day basis in order to inform your judgment?

A. Other than my interview with Dorothy Brockman in May, I did not talk with anyone.

Q. For your supplemental report, did you reach out

05:08:25 to any -- attempt to reach out to any collateral witness

to gather information about Bob's current level of impairment?

A. I did not personally reach out to anyone else.

MR. LOONAM: No further questions, Your Honor.

05:08:35 MR. MAGNANI: Your Honor, it's -- I just have one question about the portion of that that was beyond the scope of my exam, if I could just ask the Doctor why he didn't reach out.

MR. LOONAM: Your Honor, there was nothing

05:08:44 beyond the scope. He talked about the diagnosis he would reach on -- based on the information available.

THE COURT: Okay. I am going to allow just one question, but we are stretching this way too far. So, one question. That's it. However the witness answers,

05:09:01 we're done.

REDIRECT EXAMINATION

BY MR. MAGNANI:

Q. Dr. Darby, why did you not reach out to those people?

A. Well, in general, again, we were working on a team

05:09:10 with other expert witnesses, and my role was mostly focused on the medical and neuroimaging. And in terms of reaching out to other witnesses, the other experts in the case were doing that, from my understanding.

MR. MAGNANI: Thank you, Doctor.

05:09:26 THE COURT: Anything further from this witness?

MR. MAGNANI: No, Your Honor.
MR. LOONAM: Nothing from the defense.
THE COURT: Thank you, Dr. Darby. Thank you so much, sir. You are excused. You are free to remain in the
05:09:39 courtroom if you'd like.
THE WITNESS: Okay. Thank you.
THE COURT: Thank you.
Okay. Counsel, we have got about another 20 minutes. Who would be up next? And can we get started
05:09:47 in that amount of time?
MR. SMITH: Dr. Robert Denney. I think we can get started maybe with some of his background and then we can finish him tomorrow.
THE COURT: That's what I was hoping. Can we
05:09:58 go ahead and call Dr. Denney?
Hi, Dr. Denney. If you could, just raise your right hand, sir.
(Witness sworn.)
THE WITNESS: Yes, sir.
05:10:14 THE COURT: Please take the stand.
And you may proceed whenever everyone is ready.
MR. SMITH: Thank you. I think he can remove the mask.
05:10:30 THE COURT: Oh, yes.

MR. SMITH: Dr. Denney, you can remove that mask if you want to make it easier to speak.

ROBERT DENNEY, Ph.D.,

duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. SMITH:

Q. Dr. Denney, what do you do for a living?

A. I am a clinical neuropsychologist.

Q. And how long have you been a clinical neuropsychologist?

A. Since, basically, 1992.

Q. And could you just briefly describe for the Court, what does a clinical neuropsychologist do?

A. A clinical neuropsychologist is a clinical psychologist that specializes in how to measure the actual behavioral functioning related to the brain and has specialized training and knowledge in neuroanatomy, neuropathology, and the specific types of tests that are used to measure those functions that relate to brain pathology.

We basically -- yeah, brain -- brain behavior relationships. We specialize in that.

Q. And can you give the Court a sense of your employment history, who you work for now, who you have worked for in the past, since you have been a neuropsychologist?

A. Yes. I did my clinical internship at the U.S. Medical Center for federal prisoners. It was a general clinical psychology internship. And they hired me immediately after my internship to begin doing or performing forensic studies for the U.S. District Courts, although the first couple of months I worked in the medical and surgical settings of the hospital because U.S. Medical Center is a full, like about 1,300-bed medical-surgical-psychiatric hospital designed for maximum security federal male inmates.

So, the first couple of months I was in medical and surgical services because I had to wait for my psychology license to come through, which then did by January 1st, and I switched over to do forensic studies for the courts, where I was performing forensic psychology and neuropsychology studies pertaining to legal issues. I did that for eight years.

And then in 2000 I switched over to the medical and surgical side of the hospital, on a full-time basis over there, where I developed a neuropsychology service and evaluated and treated inmates and also consulted to the forensic side of the hospital to perform neuropsychological studies for the forensic psychologists and psychiatrists.

Then I retired out of the U.S. Medical

Center at the end of 2011, and I continued teaching at the Forest Institute. I had been teaching for, you know, since -- you know, several years before. And I continued to do that, and then I developed a -- I was the director of the neuropsychology program at the Forest Institute, which is a graduate program in clinical psychology, where I taught neuroanatomy, neuropathology, neuropsychological assessment, and some forensic assessment.

And then when the Forest Institute closed I switched my affiliation over to the Citizens Memorial Healthcare, or Citizens Memorial Hospital, where I work as a neuropsychologist in the Missouri Memory Center and in the neurology department of the hospital.

Also, ever since I finished my work at the U.S. Medical Center, I have been doing private consulting in legal-related cases.

Q. So, in sum total, how long were you at the U.S. Medical Center? Is that a branch of the Bureau of Prisons?

A. Yes, it is.

Q. How long were you there?

A. 21 years.

Q. So, I want to come back to that in a minute, but before we get in -- dive into the kind of specific work you do, can you give the Court a sense of your educational

background?

A. Yes. I originally obtained a bachelor degree in youth ministry and biblical studies from the Lutheran Bible Institute. And then, because of a change of events, 05:14:46 my career path changed. I developed -- or completed a Master's degree in psychology in 1989 and then completed my doctor of psychology in 1991.

Q. And during the course of your career have you become -- have you become certified by any medical boards 05:15:07 or the American -- I am going to get this wrong -- the American Psychology -- is that right? A -- You're going to have to help me.

A. Yeah.

Q. Are you board-certified in the appropriate board in 05:15:18 your profession?

A. I am.

Q. Can you explain what that is?

A. Yeah. The American Board of Professional Psychology is the umbrella board, and within that board are specific 05:15:27 boards. And I was board-certified in forensic psychology in 1997, and then I became board-certified in clinical neuropsychology in 2003.

Q. And what is the difference?

A. Well, the board focusing on forensic psychology is 05:15:49 the application of psychological principles and techniques

that is used in clinical psychology applied to the law. And that could be, you know, personal injury; it could be child custody. It could be whatever form of law that psychology can be used in. For me, it was criminal
05:16:09 forensic psychology, criminal-related matters.

Q. And in your fields of study have you authored any publications in these various areas?

A. Yes. Over the years I have focused mostly on the application of clinical neuropsychology to the forensic --
05:16:29 criminal forensic setting. That has been my main area, where I have published individual papers, some -- edited books on the issue. And then I have also published in the area of negative response by exaggeration and malingering in that setting as well.

05:16:47 **Q.** So, I am going to come back to that word, "malingering," and I am going to ask you to define it, but before we do, have you published something particular, definitive, in association with your board -- your board certifications on malingering?

05:17:03 **A.** Well, yes. Prior to that, I mean, yes, I have. I was a member of the American Academy of Clinical Neuropsychology Consensus Conference on the Detection of Negative Response by Exaggeration, Malingering, where we got together and pounded out what was the consensus of our
05:17:26 field. And that was published in 2009 and then updated in

2021.

Prior to that, I published a book -- I was a co-author in a book, gosh, *Negative Response Bias in Clinical Neuropsychology* or *Forensic Neuropsychology*, I think, and there was another one, *Detection of Deception*, those two books.

Q. So, if we could unpack some of that, when you were at the Bureau of Prisons American Medical -- what was it? American Medical -- was that called the hospital? When you went --

A. Oh. U.S. Medical Center.

Q. U.S. Medical Center. I'm sorry. Specifically, did you work with inmates in the Bureau of Prisons?

A. Yes.

Q. And what did you do with them? What was your -- what was your task?

A. I had lots of different roles.

Q. Okay.

A. Okay? Like I said, for the first eight years I was performing -- full-time performing forensic studies: competency to stand trial, sanity, dangerousness, need for inpatient mental health treatment for potential sentencing issues, occasional mitigation.

At the same time we would rotate in and out of our diagnostic and observation unit. That's where

sentenced inmates would come in from other institutions referred to the Medical Center for potential hospitalization, and we would have to evaluate them and evaluate their need for inpatient mental health treatment.

05:18:59 So, we would rotate in and out of that on a regular kind of basis at the same time as we were performing forensic studies.

Q. So, when you were performing this work, was part of the work that you did determining whether certain inmates

05:19:13 were competent to stand trial in a criminal trial?

A. Oh, yes. Most of those evaluations were competency.

Q. During the course of your career, how many such inmates did you evaluate for competency to stand trial?

A. I'm not sure exactly how many. It is somewhere

05:19:28 between 600 and 1,000.

Q. And in that 600 to 1,000 defendants that you evaluated for legal competency, did you always find them competent to stand trial?

A. No. And I actually kept track of it because it was a

05:19:44 common question that would come up during testimony. My rate of finding somebody not competent to proceed was about -- it varied from 23 to 25 percent. I kept a running total.

Q. So, can you walk -- briefly walk the Court through --

05:20:01 how would you perform these evaluations? What was your

tools? What was in your tool kit, whether a defendant was competent to stand trial?

A. Sure. Well, these were -- keep in mind these were inpatient evaluations. They were 4241(b) studies, but they were also a percentage of 4241(d) studies.

And, so, for the (b) studies we were looking at a 30-day period of time of inpatient evaluation where we would -- where I would interview them during the intake session coming in. I would interview them throughout that 30-day period. Part of those interviews would include history-taking with them, you know, obviously, depending on their setting, how they were -- If they were in a locked setting, or an open population setting, I might be seeing them every day.

But then I would interview them pertaining to not only their history but a clinical evaluation -- or a clinical interview pertaining to their mental health difficulties.

I would also interview them related to their understanding of the legal proceedings against them and the courtroom participants, what their plans were related to their case, what their thoughts were related to the whole process.

I would administer testing. The type of testing I administered varied depending on the nature of

the situation. For any cases that had memory or potential brain pathology, I would do a full neuropsychological workup on them as well.

And then I would -- I would get -- I would
05:21:35 acquire records, whatever records I could get. Typically, I would call the -- the U.S. Attorney's Office and ask for records. I would call the defense counsel on record and ask for records and information.

Oftentimes I would interview the defense
05:21:52 counsel, if counsel was willing, pertaining to their perception of interactions with the defendant.

I would oftentimes interview family members, a mother, father, whoever could give me some insight about this person's prior history before they were
05:22:10 arrested.

And then I would take all that information and write a report.

Q. So, is that, essentially, what you were retained to do by the Department of Justice in this case, with some
05:22:23 variation, of course, but evaluate the defendant here for his competency to stand trial using these tools that you just described to the Court?

A. Yeah, using whatever tools I thought were most appropriate to get the job done.

05:22:34 **Q.** Now, is it correct that you're board-certified as

both a clinical psychologist and a forensic psychologist?

A. Well, no. I am board-certified as a forensic psychologist and a clinical neuropsychologist.

Q. Can you explain to the Court the difference between forensic psychology and clinical psychology? What is the difference in those terms?

A. Sure. There is, really, a lot of overlap to it, but a clinical psychology certification -- There is a board-certified clinical psychology certification, and that's where it really focuses on diagnostic skill, but a lot more work in treatment as well, psychotherapy, providing, you know, short-term therapy, behavioral therapy, those sort of things to help a patient get better.

Typically, you know, major illness issues: Schizophrenia, bipolar disorder, PTSD issues, depression, anxiety, what have you. Whereas, forensic psychology covers all of that that would be included in clinical psychology but then takes that information and applies it to the law.

And in the example of criminal forensics, you would be applying it to statutory law related to competency, and we would study case law. Maybe it was the statutory definitions of "sanity." Whatever the issue is, we would apply our knowledge of psychology and ability to evaluate a defendant and then answer legal questions for

the court.

As a part of our training at the U.S. Medical Center, it included -- in addition to regular clinical psychology work, there was specialized training in forensics as well, which included weekly case law seminars where we covered all of mental health case law, which is pretty large, but we would focus mostly on the Supreme Court level and circuit court level. But there were some smaller court decisions, too, that were really rather meaningful and guided our understanding of -- of how to apply these psychological principles to the legal setting.

05:24:22 05:24:41 05:24:59 05:25:07 05:25:27

Q. So, when a forensic psychologist evaluates a defendant, is that different -- is the objective different than when a clinical psychologist interviews or evaluates a defendant?

A. Oh, yes.

Q. What's the difference?

A. Yeah, there's a tremendous amount of differences, and those differences can be outlined in -- in general terms initially, but then they -- they result in more specific differences.

One of them is the roles are different between the provider, or the clinician, and the patient. I'll use the word "patient" in a clinical setting, because

it's a clinical provider and a patient. In the forensic setting they are not a patient. They are a defendant or a plaintiff. And there is -- there's a -- that's important because there are certain mindset that a clinician has and
05:25:46 a patient has that come together to allow treatment to occur. And some of those assumptions are that the patient wants to get better, that the patient is going to be as honest as they're possibly able to with you.

And the other side of the coin is, for the
05:26:05 provider, there's a role, too. You're a therapeutic role. You engage in a relationship with that patient that is more therapeutic, and you are trying to draw therapeutic alliance with them so that they can get better, so you can help foster them getting better.

05:26:23 That's very -- that's wrong in a forensic relationship. You don't create a therapeutic alliance with the defendant. You have to view them a little bit more objectively in a way. You have to evaluate what they are saying to you. It may not -- recognizing that they
05:26:48 may not want to be there. They may not necessarily want to get better. They may not have the same plan that you have as an evaluator. And, so, that changes the methods you use as well. And so -- and it also changes the information sources you obtain.

05:27:09 In a forensic-type setting you want to get

the investigative material. You want to get all of those objective sort of findings. If you can, you get school records, you know, whatever would be relevant for the particular case. In a clinical setting you most typically rely on what the patient tells you and maybe a family member, but you're not going to get all these other more objective information. That's one of the differences in the way they are carried out.

Additionally, when you perform testing in a forensic setting, you must include multiple measures of validity to verify that they are actually putting forth proper task engagement. In other words, it's like putting forth the right amount of effort or, you know, actually want to do good on testing --

Q. So --

A. -- as opposed to trying to look impaired.

Q. So, in this case you evaluated the defendant here twice; is that right?

A. Yes.

Q. Once in May and once in October?

A. Yes.

Q. And, so, which type of evaluation did you perform? A clinical evaluation or a forensic evaluation?

A. Forensic evaluations, both of them.

Q. Now, in -- when you say "both of them," both

evaluations were forensic --

A. Yes.

Q. -- not both clinical and forensic?

A. I'm sorry. Yes.

05:28:26 **Q.** I just want to be clear.

Okay. So, is it -- when you do an evaluation, whether it's clinic -- psychological evaluation, whether it's clinical or forensic, the data that you are getting to come to your conclusion, is a

05:28:39 large part of that based on statements and tasks that the defendant -- that the subject, whether patient, defendant, whatever, performs?

A. Yes.

Q. So, is there an assumption or -- Well, let me

05:28:54 rephrase the question.

Is it important in your -- in the accuracy of your evaluation, whether the defendant or the patient, whoever you are evaluating, is telling you the truth or may be trying to fudge it a little bit?

05:29:05 **A.** It's -- I would say it's important in both of the cases.

Q. Why?

A. Well, because it's going -- it's going to change your -- it could significantly impact your conclusion.

05:29:21 If -- if what they're -- if what the person is telling you

is not accurate, it could very well lead you to the wrong diagnostic conclusion.

Q. Now, you used the term -- two terms you have used so far in your testimony. The first one I want to ask you about is this term "malingering."

Can you describe, in your profession, what that terms means, for the Court?

A. Yes. Basically, the definition of "malingering" is somebody who is attempting to appear more impaired or less capable in order to obtain a secondary gain. It's an intentional process to obtain a -- some form of secondary benefit.

Definitionally, you know, somebody in the military who is trying to get out of military service and they may feign a medical board type of problem. It could be somebody who is applying for Social Security disability, and they -- they want the disability money and, so, they are trying to look impaired during the testing. That's the notion of malingerer.

Q. Is there a way you can test a subject for malingering?

A. Well, you test the subject for the validity of the testing. In other words, you use measures that test for proper task engagement, and from those measures -- how the person performs on those measures then gives you insight

as to whether the other test data you have collected is valid or not.

If your validity tests suggests a person was not performing properly and putting forth proper task engagement -- in other words, doing their best, wanting to do good with you, and they don't do that, then all of your neuropsychological test data is not reflective of their genuine abilities.

I can give you an example. You -- you -- A high school -- a school psychologist comes in a junior high and is told, 'Hey, you need to evaluate the IQ of this student.' And they drag the student out of class and you sit down with the student and you say, 'Hey. I'm going to give you an IQ test. My name is Dr. Denney.' And the kid says, 'Who are you?' and 'Why am I here?' and 'Why do you have to give me this test?' And they don't want to do the test. They don't want to be there. They just want to go home. But I force them to kind of go through the test. But if they are not putting forth the optimal task engagement, they don't want to do their best, they don't care, the scores -- maybe the score is 80, but that is not their genuine ability. Their IQ may have been 100 or 110. We have no idea. But it under-represents the genuine ability. That's why it's important.

Q. So, is this validity testing that you're describing

for the Court -- is this different than the cognitive testing that you did?

A. Yes. Validity testing can basically be broken down into two. There is multiple ways to break it down, but there is two large categories. One is performance validity testing, and the other is a symptom validity testing, although I'll tell you the literature is all over the board, historically, because that's a more recent categorization.

Performance validity testing talks about is the person's actual performance during testing valid? Like are they putting forth a reasonably good effort? They are trying to do good. They are trying to do well on your test.

Symptom validity testing is more a symptom report. And, so, those measures would be like somebody -- like a questionnaire, a depression questionnaire, or an anxiety questionnaire, or any kind of symptom questionnaire. And there are scales in those questionnaires that will try to identify whether somebody is exaggerating their symptom report or maybe even denying and minimizing their symptom report, the opposite side of that coin.

And, so, some of these -- and, so, in looking at the performance validity tests, some of them

are freestanding. You take this test off the shelf and you administer it along with your other tests. But some of the performance validity tests are called "embedded." Maybe it's a regular IQ test, for example, a standardized
05:33:51 IQ test that is off the shelf that any psychologist would use. But over time we have learned that there are certain characteristics in that test that, if they come up a certain way, is indicative of the test not being performed with proper task engagement. Those would be called
05:34:06 embedded validity indicators, or measures, or tests, or what have you.

Q. And it's these validity tests you used to determine whether a subject is malingering or not?

A. Well, yes. Thank you for getting back to the point.
05:34:20 These tests only tell you whether the test data are valid or not. And if you conclude that the test data are not valid, you have to stop and ask yourself, okay, why are they not valid? Are they not valid because the person is severely impaired? Maybe they really are
05:34:38 impaired so badly that they would fail this test. Or is it impaired because of psychological, emotional difficulties? And it's not -- if it's not that they are being intentional about it, maybe it's an unconscious kind of process, like somatoform disorder or conversion
05:34:58 disorder.

So, you look at the entire clinical situation and decide whether there is obvious secondary gain present. And if there is obvious secondary gain, then you -- you basically fall in the malingering determination, because that meets the definition for "malingering."

Q. So, did you apply some of these validity tests when you evaluated the defendant in this case, both in May and October?

A. Yes, I did.

Q. And are these validity tests that you have just described to the Court -- are these tests only done by forensic psychologists or are they also done by clinical psychologists?

A. Well, they're done by psychologists in numerous different settings. In my -- in my office in the clinic, in the dementia clinic, I include validity measures in all of my assessments, because, first of all, you don't know when somebody shows up with an under-the-surface plan for disability, and you didn't know that. Sometimes there is psychiatric problems that get in the way with their ability to perform well on your testing. And without the validity tests included, I would not be able to tell whether this test is valid or not. It may look very strange. It may be inconsistent with the person's actual

presentation, and that might be significant enough for me to say, look, this is not valid. But I want to have objective measures in there to help guide me in terms of giving me some confidence that the test data are valid.

05:36:31 **Q.** So, in your forensic psychological evaluation of this defendant twice, once in May and once in October, did you come to an opinion of whether or not this defendant is competent to stand trial in this case?

A. Yes, I did.

05:36:45 **Q.** And what is that opinion?

A. It's my -- my professional opinion that he is competent to proceed.

Q. And is that the same opinion you had in May and October?

05:36:55 **A.** Yes.

Q. And what do you base that opinion on?

A. A lot of things. I base it on the -- the -- first of all -- I'll just try to get them out of the way -- the neuroimaging findings suggesting that his condition is

05:37:16 mild or very mild, the -- that's the functional imaging. The structural imaging, the MRI, particularly when you look at the temporal lobes and the areas of the brain that I would be most concerned about pertaining to memory problems. Those areas are within normal limits in their

05:37:37 quantitative size.

I look at his presentations during my examination with him. I look at his behaviors, the -- some of the things that were inconsistent that suggested to me that he was exaggerating.

05:37:54 I also administered competency-specific testing. In May, it was the competency assessment instrument. In October, it was the evaluation and competency to stand trial. "ECST-R," it's called. And on these measures his performance was reasonably normal.

05:38:15 Now, I'll give you a caveat, that he was reticent to answer questions during multiple times, that he said, 'Well, I think we're deviating from the road here and I don't want to answer that because you're getting too much into my case.' And that, in and of itself, right

05:38:30 there is meaningful because that means he's got the wherewithal to say, 'You know, I think I want to protect my rights and not talk to you when I don't think it's appropriate.' That's meaningful.

Now, he said it was advice -- advice of

05:38:45 counsel. I don't know if it was or not. Regardless, it looked to me like he had proper motivation to defend himself.

The test data suggesting gross exaggeration, so I can't rely on the test data to say that

05:39:03 he is impaired. I don't believe there is any valid

objective data to say that he's got substantial impairment.

I also considered my own experience related to evaluating criminal defendants who had mild
05:39:20 dementia -- MCI and mild dementia. And just because a criminal defendant has mild dementia does not mean that that person is not competent. People with mild dementia can be competent, particularly if they have got very good counsel and the nature of their case is such that the
05:39:40 investigative material is very thorough and it is set up in such a way that defense can reconstruct exactly what happened. Whether or not there is a potential for alibi would be relevant to that.

So, just because somebody has some mild
05:40:00 memory difficulties -- and I -- we'll end up getting into the words "mild" and "moderate," I am sure. But just because a person is mild -- has mild dementia does not necessarily mean he is not competent. He could be not competent, but I have seen many people with mild dementia
05:40:17 that are competent.

MR. SMITH: So, at this point, Your Honor, I am going to start getting into the tests. I think this might be a good place to break if Your Honor wants to break at this time.

05:40:24 THE COURT: Perfect.

Everyone, we thank you for following the Court's schedule. I think we are right on track.

Can we start again tomorrow morning at 9:00? And if there is anything that you want to take up before 9:00, can you -- when you come in, can you let my case manager know, and then I'll come out? I usually come in, as you saw this morning, right around 8:30. So, if there is something that you need to address earlier, let me know and we will do that before 9:00.

05:40:36

05:40:51

05:40:58

MR. SMITH: Very good, Your Honor. Thank you.

MR. LOONAM: Thank you, Your Honor.

THE COURT: Anything else we need to talk about this afternoon?

MR. SMITH: Not from the government.

MR. LOONAM: Not from defendant.

THE COURT: Okay. Well, thank you all. Have a good night and we will see you tomorrow morning at 9:00.

(Concluded at 5:40 p.m.)

COURT REPORTER'S CERTIFICATE

I, Kathleen K. Miller, certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

DATE: 11/18/21

/s/ Kathleen K. Miller

Kathleen K. Miller, RPR, RMR, CRR

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